Election Day blues

David Moschella: IT is hard to pander to muffling its voice in Washington, 35



Dousing Disney Embedded database helps protect Magic Kingdom, 57 The World's Technology Newspaper www.computerworld.com November 2, 1998 • Vol. 32 • No. 44 • \$4/Copy



TIME WARNER CASE COULD REDEFINE 'CONTRACTOR' Re Bark Cale Gomolski

IN a Case that should hit close to home for many IT departments, the U.S. Department of Labor has accused Time Warner Inc. of denvine pensions and

health benefits to full-time workers by wrongfully classifying them as temporary workers or independent contractors. The case marks the first time the agency has taken on this

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employees, and we believe some misclassified Time Inc. employees did not receive benefits they were entitled to," Labor Secretary Alexis Herman said when announcing the suit. Time Warner shot back with a statement that said the Labor sis in law or in fact.

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*Employers must deliver

"The IT industry should pay Temp status, page 104 Oracle moves

strongly into

warehousing

By Stewart Deck

Unix regroups against NT on the high end

write the obituary for Unix. think again. Windows NT has been work ing up a head of steam in the workstation and workgroup erver markets. But Web commerce, mainframe replacement and high-availability requirements continue to fuel user demand for Unix systems. And

Big retail

SAP project

out on ice

Unix regroups, page 105

WHEN IT COUNTS would you choose to run a mission-critical application?



Unix '

ORACLE CORP. confirmed that tomorrow it will announce several recently acquired data warehousing tools and capabihties that, when combined, will form a new, integrated ware housing strategy, from the back end through management

Analysts said this is a stro step for the company. This sounds like an integrated, end-Gracia, page 16

drive workers nuts

By Craig Stedman IT USED TO TAKE Workers at

Hydro Agri's Canadian fertilizet stores about ao seconda to stalling SAP R/3 last January

companies: Enterprise resource

The average order-processing time ballooned to 90 seconds because the workers had to navigate through six R/3 screens to enter all the required data. It's a problem faced by many

software promise many corpo-rate benefits, but they have unwieldy user interfaces that can productivity and hurt cus changed things — and not for "We take 45,000 orders dur-ing a six-week period, and click-ing from screen to screen was a

ERP user interfaces

killer," said Andy Hafer, director of information management at Tampa, Fla-based Hydro Agri North America Inc.

planning applications such as SAP AG's market-leading

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By Craig Stedman WASH FINCH CO., one of the first sers to buy a version of SAP

R/s for retailers, last month shelved most of its \$76 million project after development delays made it impossible to install the software in time for the year

Instead, the Mini based food wholesaler and supermarket operator, which has already spent about \$50 million SAP project, page 104

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ERP user interfaces

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U.S. challenges temp status

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Unix regroups against NT on the high end By Jaskumar Vijayan WHEN IT COUNTS

IF YOU'RE GETTING ready to write the obituary for Unix.

think again. Windows NT has been working up a head of steam-in the workstation and workgroup server markets. But Web commerce, mainframe replacement and high-availability requirements continue to fuel user de-

Big retail

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would you choose to run a mission-critical application?

Which server operating system

· Windows NT Unix

Don't know Base: 105 IT managers at co-with 200 or more employed with Windows HT Server and any strongly into warehousing

Ry Stewart Deck

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By Craig Stedman

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By Crose Stedman NASH FINCH CO., one of the first at Tampa: Fla.-based-Hydro Agri users to buy a version of SAP ERP, page 24

R/3 for retailers, last month shelved most of its \$76 million project after development delays made it impossible to install the software in time for the year

Instead, the Minneapolis hased food wholesaler and supermarket operator, which has already spent about \$50 million SAP project, page 104 Programmers who are blind find that Win-

dows developments are closing doors on career opports ities. Janina Sajka (at right) notes that the graphic nature of Windows too kits is forcing programmers like her out of

mainstream des IT Careers, page 86



as SAP AG's market-leading software procuse many corpo-

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tor of information management

North America Inc.

"We take as one orders dur-





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In this issue

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H DEPTH

IT CARGERS greaters take are filled to at their fature as graphic teels the ampleged ones they

ore to the Xana and Mercal chies.

- Ports mater bursts from niche e with IT avarhaul to help it compete
- receif cinions Netscape set R up in
- unitain its rap for great service?

- STREETS STATE
- Tuys it Us swears off contractors, cal-ing them an expensive addiction; it adds full-time staff instead.
- INTERNET COMMERCE TV premises to be a hot Web platf THE ENTERPRISE METWORK

ENTERPRISE RESOURCE PLANNING

Retailer closes ERP project, returns to main frame, after costly failure. \$

ERP stows orders at farm company; other ERP users also see productivity take a hit. 1

Retailers edge toward ERP apps but can't let go of existing best-of-breed software. 4

ERP vendors discount heavily to attract cus-tomers in vertical markets, 57

Briefi

Programmers who are blind can work pretty well using text-based interfaces and screen translating devices. But many can't use standard drag-and-drop tools, leaving them unable to compete with sighted coders. Many worry they'll be out of jobs before long because alternative technology is too expensive. Page 86

The Labor Department has accused Time Warner of cheatng by treating temp workers the staff members but denyi em benefits. Time Warner rahly denies it, but this acci-tion, first of its kind, could sation, first of its kind, could affect all companies that hire contractors. Temp employmen is high, as IT groups deal with year 2000 and other projects. Many contractors like their status, but their employers must differentiate between temps and permanent staff. Page 1

Nash Finch and other compa nies are finding that enterprise source planning (ERP) appli-tions are more trouble then cy're worth. Others find that ERP slows them down in areas such as order-taking, Many lering the ers are reconsid whole approach, even as ERP ors accelerate their effor Pages 1, 4, 57

*Ford car parts maker Visted is trying to sell to other man facturers but has to overhaul it IT infrastructure to do so. It wants to cut product development time by two-thirds and cut manufacturing time by %: It's moving away from %. It's morning away is com-magrown software to an ERF stem, but it also needs many facturing, analysis, engineer and other systems. Page 6

> etntranet-based training shows a lot of promise because it cuts down on travel and can include live interaction with the teacher.

But it's harder to ask questio it's depersonalized, and even proponents think classroom oching is better. Page 77

e Employee referral programs are popular, but as the IT labor market gets tighter, companies rely even more on them. Price waterhouseCoopers gets one hire out of three from referrals US West rewarded its best em-ployee referrer with a trip to Howali. Even retailers are hav-Howali. Even retailers are hav-ing to overhaul traditionally skimpy referral and retention plans to keep staff. Toys R Us, which had relied heavily on stractors, recently reven course, reducing its temp head count. Page 10

 Consulting is a good career alternative for some IT profes-sionals, but before striking out on their own, they need to put together a solid business plan and accept that contracts, not long-term job relationships, de fine how they deal with clients Consulting is risky, un and, like any small business, doesn't let the preprietor pur out at five o'clock, Page 80

eTV-based devices show promise as a way for conpromise as a way for con-sumers to reach the Internet. But despire analyst reports that TV will explode as an ac-cess device, site designers are toleting tight, net adding TV-specific treaks until they see proof that couch-surfing is taking off. Page 43



anks to



Retailers seek more ERP functionality

ALTHOUGH ENTERPRISE TRIGUICE alsomon (ERD) umdom om moving aggressively ioto the wide-open market of the retail industry, users and analysts said ERP will have to provide great industry-specific functionality if it is to displace today's popular appearch of integrating bestof-breed software.

That market is much less netrated than virtually any other economic sector," said Donald Bellomy, an analyst at Aberdeen Group Inc. in Boston. Retailers were late to leave mainframes behind and had until recently showed little desire to look at ERP, he said. That's why major ERP vendors have been buying or partnering with vendors that have retail specialities to increase their

anneal to retailers. One of the first U.S. adop tions of SAP Retail went Irre Oct. 4 at Reebok International Ltd. in Stoughton, Mass., said

W. Burrows Reebok chose to use an ERP system as its supply-chain buckbone not only because the applications will integrate smoothly, but also because the system will last for years.



Liz Claiborne's John R. Thompson says his company has found bestof-breed solutions offer greater flexibility and meet more specific needs than ERP systems do.

he added

Trying to mix and match bestof-breed applications could expose Reebok to trouble if ven does fail or are acquired

Burrows said. Also, as a global company. Reebok didn't want to run the risk of having to choose a set of best-of-breed applications in every country in which it has an outlet But like many retailers,

the warehouse management and in-store systems. will stick with SAP Burrows

tions yet. Other vendors provide Still, when possible. Reebok

said. "It is a very, very conscious

decision not to Istay with SAPL

ERP software makes integra

tion a snap, and it's less cum

bersome than in-house develop-

ment or elaborate integrations

of best-of-breed applications,

agreed George Purdy, informa-

Cleveland-based Carlton Cards

on systems vice president at

across all its enterprise funcsidury of American Greetings Carlton began using IDA Software Group Inc.'s ERP soft-

ware to 1991. IDA's presence grew after a 1996 upgrade of Carlton's merchandise management package and addition of a data warehouse system. Carlton now is evaluating IDA's in-store

But other retailers are choosing best-of-breed applications, saving ERP systems aren't For example, Torontobased Roots Canada Ltd. is replacing a set of IDA retail applications in favor of a set of best-of-breed applications integrated by Richter Systems Inc., aid Darlene Goren, director of corporate operations and tech nology at the clothing and furnishings company. FRP vendors couldn't handle

he said. D the company's needs and would have confined its operations she said. For example, Roots franchisees needed a purchase

order module at their sales terminals, and users at beadquar ters wanted to easily import and export data to their desktops. The ERP system couldn't do that. Goren said.

"You have less flexibility in ERP," agreed John R. Thompson, CIO at New York-based Liz Claiborne Inc. The fashion company has found greater functionality in using different products than it has seen in ERP systems. For Liz Claiborne, where employees have much autonomy, best-of-breed programs let employees work with the best tool for their specific needs and talents. The sweeping changes imposed by ERP systems work better in more autocratic companies, he said. Thompson did acknowledge that ERP vendors are reducing their rigidity and increasing their functionality. "Many ERP companies have come to grips with that. The story isn't over,

Retailers get creative to igne IT talent. Page 39 ERP vandors turn to pricing as a competitive weapon. Page 57

Self-healing systems may cut help desk calls

INFORMATION TECHNOLOGY CKecutives looking to significantly reduce help desk calls are eyeing a new product based on self-healing technology announced today by Tiom Systems Inc., a start-up in Palo Alto, Cahi

Self-healing pe ichs automatically restore desktop applications to their original state by lling application compo nents damaged, removed or dified by other programs. More than 60% of help desk

calls are from users who are upable to access their applications, according to Hurwitz Group Inc., a research firm in Framingham, Mass. Many users delete required program files or install programs that damage other programs by overwriting shared components with incompatible versions.

A Hurwitz study for Tipea estimated that self-healing soft ware such as Tioga's can reduce total cost of ownership for PCs by \$3.800 over an unspecified

Tiona's Self-Healing System doesn't require a help desk administrator to fix applications because it works auto with the end user's Windows

and uninstall unlities do The software takes a snap of the components of a Windows program and stores them on a server. It then probes the program at set intervals and remetalls any damaged or missing

components, according to options set by the administrator. The end user may not even realize the reinstallation hap-

A few products, such as Mi-crosoft Corp.'s Office 98 for Macintosh, will reinstall needed support files when they launch. Some help desk programs, such as Radia from Novadigm Inc. in

Mahwah, N.J., and Picture Taker lis, reinstall only an entire application, causing user down time. Although Tioga's approach is new Ronni Coleville an analyst at Gartner Group Inc. in Stamford, Conn., expects other vendors to follow sui

World Savings & Loan in Oakland, Calif., had a system outage in its accounting department when the department rolled out a new version of a custom application that included a new database driver. That driver prevented the older vertion from working simultaneously with the new version. It

get it running again. Outages such as this can swealt in us to 400 calls to the help desi take houss to repair and unpair user productivity, said Brian

at the bank Although the concept of Tioga's software appeals to Dana, he said World Savings couldn't use the current versi because it doesn't work with

resolving issues at the server Tioga officials said the next ver Daga, senior IS vice president sion would interact with server operating systems

Stanford University in Palo Alto, Calif., uses Tioga's software. CIO Raman Khanna said he hopes the result will be that the IT staff of more than 350

large enterprise network man-

ent software. He said his IT staff spends most of its time

can focus oo more in networking tasks and not spend time - at a cost of \$80 per hour - visiting end users' PCs. While many businesses use technology that restricts users from downloading unapproved applications, Stanford doesn't.

"It's a free for all here," Khanna In addition to having Stan ford's standard shrinkwrapped and homegrown applications. the university's 30,000 users often add their own software as well as various utilities plucked

Baan to lav off 20%, names Coleman president

By Croig Stedman

MAN CO. is swallowing son thing few ERP vendors have had to choke down: a strong dose of lavoffs. Two weeks after warning that

it would report a third-quarter loss, the struggling Dutch com ouny dropped the other shoe last Thursday. Baan announced a stunning 20% workforce cut along with the \$4.7 million loss and the latest in a series of tonanagement changes. Baan said the layoffs will win

now out sales, marketing and administrative jobs that mushroomed as the maker of enterprior resource planning (ERP) software went on an acquisition binge over the past two years. Keith Bearden, CIO at A-dec Inc. in Newberg, Ore., those kind of cuts don't counall bad. Bearden said reveral

Baan salespeople have been hounding burn to buy different But Baan's financial health will bear close scrutimy as A-dec prepares for an early-roog applications upgrade that will cost close to \$1 million. "To see em lose money when SAP is

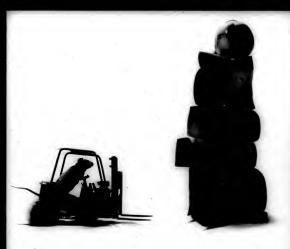
still doing well is not real comforting," he said. Baan named Mary Colemao who had been running its Aurum' Software sales force an-

dent. She takes over that job from Tom Tinsley, who remains chairman and CEO. Coleman could be "exactly the

prescription this patient needed," said Joshua Greenbaum, an Berkeley, Calif But Baan still has to integrate

all its different products. Greenbaum said. For oow it's having trouble

selling the acquired software within its ERP installed base. he added. The company also is working on a marketing makeover that shifts its focus to midsize users and indirect sales channels. Cl



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IT revamp fuels auto parts maker's expansion

▶ Effort seeks to integrate core processes

By Rob Wallace

ONCE JUST AN auto parts supp er to Ford Motor Co., Visteon Automotive Systems is immersed in a massive IT overbaul designed to integrate its core processes and drive its new business challenge of expanding

unto the open market. The \$17 billion Dearborn. Mich based Visteon is banking on the estimated \$100 million makeover to streamline its business and power its recent entry 1050 the fiercely competitive

auto parts market. Although the information technology makeover is far from complete, Visteon has already secured new business from 13 automakers

Visteon already is a large lobal company with about \$2,000 employees in 21 countries; 81 plants, including to joint ventures; and 36 sales offices, engineering and technical

The key goals of the IT over haul are to cut product development times from an average of so months to 10 months, re-

duce manufacturing time for parts from an average of five days to one day and have 20% of its business come from non-Ford sources by 2002. The challenge here is awesome," said Dave Monroe, a senior analyst at Plant-Wide Re-

search Group in North Billerica. Mass. 'Re-engineering this 'Re-engineering this busi-

ness organization is equal to designing and engineering John Glenn's

space shuttle." - Dave Monroe. Plant-Wide Research

to designing and engineering John Glenn's space shuttle. Visteon has to develop people's skills, product procedures and documentation on top of setting customers and suppliers on a global basis. Visteon is fairly unique in its

pert said.

grown legacy systems, while other companies like Lucent and Procter & Gamble that are doing similar things have the husury of more time," said Joho Bermudez, group vice president of enterprise research at AMR Research Inc. in Boston

Although many large companies are implementing enterprise resource planning systems a small number, including Visteon, have realized that isn't enough and that supplemental packages are needed

he added date. Visteon is implementing

SAP AG's R/3 and Netscape Communications Corp. products to support Internet-based electronic data interchange (EDI), a production data man agement system and a plant scheduling and planning mack-

anomach to IT, one industry ex-"Visteon is being forced by a new business condition to quickly separate from home-

ent system. The company has already ssembled project teams to per form design, prototype and testing work on the new applica-

With a summer 1999 target

And they will have many irons in the fire. Among them is R/3-Visteon, which will use SAP's

cations Corp.

Structural Dyna

Research Corp.

R/1 central business process lules to form a backbone for business transactions, said Dave Bent, Visteon's director of en-Cigna's new CIO looks beyond 2000 terprise processes and syste It will supplant most of the company's current transactions

tions. The teams comprise Viston IT workers as well as

on-site technical experts from

each vendor in the project.

in purchasing, accounting, financial analysis, distribution sales order management and other companies it acquires or We had been using a set of legacy systems on mainframes and client/server [platforms]."

Bent said. Because those applications weren't integrated. tended to be functionally driven rather than process-driven," he

The company will use com-

Visteon's IT overhaul

Benefit Streemline transactions, achieve application integration ppliers and customers save using Ease data access by using single repository for production data

> Simplify plant plenning and Accelerate product development

age. Also due is a new procure-

mercially available interfaces wherever possible to integrate its other new manufacturingrelated applications with R/1. be needed. Three vendors participating

in the Visteon makeover already offer interfaces to R/3, Bent Also on tap is product data management. Visteon is work-

ing with Structural Dynamics Research Corp. to install and tie in a system that manages product development data. With the new package, computer-aided derign, engineering and test results data resides in a central repository rather than many dispersed databases. This much more integrated approach, will enhance the

ductivity of our engineers. The auto parts and systems firm has teamed with Netscape to provide the products and knowledge to create central EDI hubs, or a clearinghouse that uses the lotemet. And because

it's based on the Net, users will find that it substantially less expensive than using EDI services from value-added networks. []

By Dobert I Scheier .

ANGREA ANANIA Was named CIO at Cigna Corp. jus last week, but she's already received a great welcome present applications and systems that are largely year 2000-compliant. That should let her refocus spending on applications that can crush the competition.

The year 2000 has con sumed a fair amount of investment' during the past two years. Anania said. 'The bulk of the remediation work will be done by the end of the year As a result, she plans to shift

most of Ciena's information technology budget to applications that deliver com age for the \$20 billion incorer, health care and financial services provider.

Ananis joined Cigns in 1995 as information systems officer for Cigna Retirement and eut Services. And a year later, she was named sex vice president, responsible for

CIGNA CORP. Headquarters: usiness: Insurance,

Will refocus IT to build competitive advantage

health care and finan cial services

1997 revenue: \$208 1997 net income: \$1.16

the unit's business and IT As Cigna refocuses on appl cation development, one chal-lenge will be finding and stan-

dardizing on tools to help Cigna build object-oriented applications that can link customers. suppliers and various operating units of Cigna over the Web, Ananis explained.

"Over time, we're developing sore and more common cusers" across Cigna's various operating units, she said. In ad-

merge its systems with those of To pave the way for interoperability among applications and systems. Cigna is about twothirds through the process of

standardizing its users on Windows 95 and NT clients, NT servers and IP and router-based networks. Anania said.

She declined to say, however

merces with.

whether she plans any changes in the size or structure of Cigna's IT group, whether she ies to outsource any work or the current or future size of Cigna's IT budget

She did say that Cigna's year 2000 work, which was finished earlier than its competitors, has given the IT staff valuable project management and software testing experience that will come in handy as it moves further into development of new applications.

Anania replaced the retirine Raymond Caron, who was CIO since 1988. D

Exchanges suffer systems snags

SYSTEM GLITCHES STruck at two major stock markets last week, causing data-reporting errors for some mutual funds

A failed switch halted all stock trading Oct. a6 on the New York Stock Exchange. The switch problem affected less than a quarter of the 3,760 stocks traded on the Big Board but exchange officials stopped

all trading so that technicians could replace the switch and clear out queued-up trades. The National Association of Securities Dealers hopes to have

a fix in place this week for a software glitch responsible for distribution bad data to Lipper Analytical Services, which provides mutual fund prices to The Wall Street Journal

The software problem began two weeks ago, when the Nasdag Stock Market Inc. installed a new mutual-fund quotation

The snag has affected the changes in the net asset value of several hundred mutual

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SAS Institute Inc.

Microsoft points finger at Netscape

· At trial, claims tactics are industry norm

B. Kom S. Nash and Patrick Thibodogu WASHINGTON

MICROSOFT CORP Was set up by Netscape Communications Corp which itself tried to illegally divide the online market in calavors with America Online Inc., according to the version of events Microsoft presented in court here Jast week.

But Microsoft's latest argument didn't hold much weight with some legal observers. Microsoft appeared reads to traarry number of defenses some more plausible than others - simply to raise doubts about U.S. Department of Jus-

tice antitrust charges, they said Microsoft wants to show that in its competition with Netscape, it was acting just like other companies in the industry. said Robert Lande, a professor of antitrust law at the University

of Baltimore in Maryland Licensing deals, agreements to promote each other's prod ucts and other close partnerships are routine in the soft-

ware business. But the critical difference is that other compa nics don't control monopolies Lande said 'That's what this trial is all about " he said Meanwhile, the Justice Department because to sluft the focus from Microsoft's dealings with Netscape to its meetings

with Apple Computer Inc. and AOL It's part of the govern ment's argument that Marcooft conducted a pattern of illegal beltavior - using its monopoly to operating systems to wrest control in other markets. Mi crosoft vigoroush demes both that charge and the assertion

that it has a monopoly David Bores lead lawyer for the Justice Department, submitted evidence that, he said, shows Microsoft twisted Apple's arm to use Microsoft's Internet Explorer browser instead of tscape's Navigator

The day after Apple joterum CEO Steve Jobs announced that Microsoft was taking a \$150 million stake in his company, in August 1997. Netscape CEO Jim Barksdale got a telephone

cult from Earl Andreson Apple's chief financial officer In handwritten notes, Anderson had scripted what he wanted to

to ensure that Microsoft would continue to provide MS Office for Mac or we're dead," Ander-

HOW AOL TURNED

U.S. prosecutor David Boxes wove together E-mail to suggest Microsoft diegally muscled America Orane to drop Netscape

out of We32/ Win95, award batnext year.

- from a memo by Paul Haritz 1bon bee Galen on June 1, 1995

"From a pure technology standpoint, it does look the Micros may win this one. Couple that with their distribution (05) muscle, then Netscape clearly has an uphill battle. So we do need a very strong Goal with Noticage (Not proming, board seat, etc.) to go with them; at this point, we have that, but if it gets watered down, it may

be Microsoft time - as difficult as that prospect may seem." - Stove Case, it as internal ASI, memo

he coin the battle with Hetscape h'est dradt I bes be a terrific ally for you (and vice

im Burkstate, CES of Retscape, in a dial a mary non-mollion on factories 1986, 475 cm "I falked to how

this afternoon He said they are

month. I told him I wented to con since him to nay a visit and mails talk about our neate - Bill Cates, in an informal Microsoft mome Jan. R. 1996, recarding Street Case

son wrote "They were threater ing to abandon Mac." The "trad ing card" was to make Explorer the default browser. Anderson

This week, Avic Tevanian, vice president of program at Apple, is expected to take the stand. Although Judge Thomas Penfield Jackson has put the trial on a quick schedule, proceedings are moving slower than expected, said Robert Litan, a senior fellow at The Brookings Institution, a Wash

With the trial now in its third week just two witnesses out of 24 have been called and disposed of Only a small portion of the 1,200 pieces of evidence has been formally submitted *By the time of a final ruling life [in the software industry] will have moved on substantial

All of the legal posturing irritates information technology professionals said Don Slough vice president of M15 at Food maker Inc., a San Diego company that owns the lack in the Box restaurant chain

he" Litan said

'It's hard to even know what to believe." Blough said. The case basn't affected Foodmaker's technology buying decisions: it uses a mix of Microsoft and other products.

Some see ploy in NT rename

. Users resigned to even later arrival of OS

Br Sharon Gosdin MICROSOFT COSP,'s decision to rename Windows NT as Windown 2000 has some corporate

users preparing to wait even longer for the release date than cooft is publicly predicting "I had doubts about it coming out 10 1999 before the name change," said James Graham, a network architect at Atlanta-based BellSouth Bust-

ness Systems Inc They're trying to cushion the blow a little bit in case the dates slip. But f think it would be bester to wait til anno answay hecause people will be too busy with year 2000 issues to po

crasy making the switch," Graharn said Last week Microsoft announced that its heavel-duty NT operating system would take on the Windows 2000 moniker. signaling the end of Microsoft's investment in DOS-based operanng systems such as prede sors Windows Lt. os and o8. Because Windows 95 shipped

in 1995 and Windows 98 shipped in 1998, some industri watchers said they find it hard to believe Windows 2000 will come in 1999, as Microsoft executives, including CEO Steve Ballmer, relentlessly promised

The wast will leave corporate

They [Microsoft] are trying to cushion the blow a little bit in case the dates slip - Be#South's James Graham

buyers with a couple of choices:

want for NT s.o while sticking with Windows 95 or 98 or mov ing to NT 4-0; or contemplate other server-based operating systems, such as Novell Inc.'s NetWare 5.0 and Sun Microsys tems Inc.'s Solaris a.r. which are on the move. Indeed while Microsoft con-

other operating system vendors are hitting the ground running Sun announced a 64-bit Solaris last week ICW, Oct. 261 IBM is teaming up with The Santa Cruz Operation Inc. and Sequent Computer Systems Inc. to build a merged Unix for the Merced chip (see story, page 1). And Novell's NetWate 5.0

shipped last As for Gra ham, he said at thus moint if he needed more NT he wouldn't wait for NT s.o but would buy NT

But he's also to the process of switching over 68 application servers from NT to Linu He said the move is based on

the fact that Unix scales better. Analysts at International Data Corp. (IDC), a suster comparry to Commentensoria, and Forrester Research Inc. predicted that most users would move to

*Even if a company has plans to go to NT 5.0, the majority of organizations are going to wait a year to is months to implement it," said Bill Peterson an analyst at Framingham, Mass. based IDC

"Now that Service Pack 4 for NT 40 has shipped with a lot of cool stuff, NT 4.0 ts a solid product with an impressive installed rate," he added Issac Applbaum. CEO of Concorde Solutions Inc., a subsidiary of Bank of America, said renaming Windows NT was a

great marketing plan. "They're bedging their bets." Appibaum stad, "It's a brilliant idea. If NT 5.0 comes out in 1999, they're big winners. If it comes out in 2000, they can say. 'See, that's why we numed it Windows 2000.

lo Ballmer's keynote at the recent Networld/Interes '08 conference, he said the fact that NT 5.0 still doesn't bave a ship date bothers him. "It's still a ways in the future, and I feel

Microsoft has dragged its feet for more than two years talking about the NT 5.0 operating systern. With an active directo and new security features. NT 5.0 is to the second phase of a

three-part beja-testing cycle And despite the occasional slip of a date reference from various executives, an official ship date still base't been set []



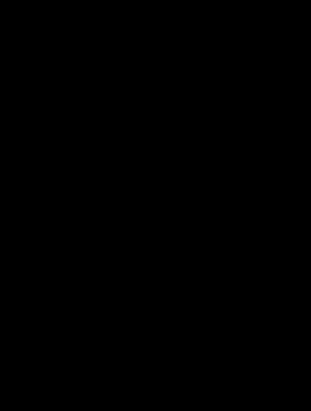


Yes Mo No

BB Don't know

* Net committing to a shipping of for Windows NT 5.0 and public co ments on lowering expectations for what the operating system will do Bake: 105 IT managers at con

with 200 or more employees who have Windows HT Server and any sion of Unix in use



Microsoft points finger at Netscape

. At trial, claims tactics are industry norm

By Kim S. Nash and Patrick Thibos WASHINGTON

ICERSOFT CORP. Was not up by Netscape Communications Corp., which itself tried to illegally divide the online market in cahoots with America Online Inc., according to the version of events Microsoft presented in court bere last weel

But Microsoft's latest argument didn't hold much weig with some legal observers. Microsoft appeared ready to try any number of defenses some more plausible than others. - simply to raise doubts about U.S. Department of Jus-

Microsoft wants to show that in its competition with Nets cape, it was acting just like other companies in the industry, said Robert Lande, a professor of antitrust law at the University

pore in Mandand. Licensing deals, agreements to promote each other's products and other close part ships are routine in the soft-

By Sharon Gaudin

ware business. But the critical ference is that other componies don't control monopolies Lande said. "That's what this

trial is all about," he said. Meanwhile, the Justice Department began to shift the focus from Microsoft's dealings with Netscape to its meetings with Apple Computer Inc. and AOL It's part of the govern ment's argument that Microsoft conducted a pattern of illegal

schavior — using its monopo in operating systems to wrest control in other markets. Microsoft vigorously denies both that charge and the assertion that it has a monopoly. David Boxes, lead lawyer for the Justice Department, submi

ted evidence that, he said. shows Microsoft twisted Apple's arm to use Microsoft's Internet over browser instead of Netscape a Navig

The day after Apple interim Microsoft was taking a \$150 million stake in his company, in August 1997. Netscape CEO Jim Barksdale got a telephone

Apple's chief financial offices. In handwritten notes, Anderson

to ensure that Microsoft woul had scripted what he wanted to

HOW AOL TURNED U.S. prosecutor David Boies wove together E-mail to suggest Microsoft Megally

out of We32/

iet, it does look like Micre y win this one. Couple that w oir distribution (OS) muscle, then riscape clearly has an uphil but tie. So we do need a very strong ming, board seat, etc.) to go with there; at this point, we have that, but if it gets watered down, if may be Microsoft time — as difficult as

that prespect may seem."

continue to provide MS Office for Mac or we're dead," Ander-

baste

th. I told him I w ce him to pay a visit and n talk about our coals.

maker's technology buying decisions; it uses a mix of Microsofi and other products. (3) three-part beta-testing cycle. And despite the occasional slip

son wrote. They were threat ing to abundon Mac." The "trad-ing card" was to make Explorer the default browser, Anderson

This week, Avic Tevanian

vice president of programming

at Apple, is expected to take the stand. Although Judge Thomas Penfield Jackson has put the trial on a quick schedule, pro-

ceedings are moving slower than expected, said Robert

Litan, a senior fellow at The

Brookings Institution, a Wash inston think tank

With the trial now in its third

week, just two witnesses out of 24 have been called and dis-

posed of. Only a small portion

of the 1,200 pieces of evidence

has been formally submitted.

"By the time of a final ruline.

life [in the software industry]

will have moved on substantial-

All of the legal posturing irri-

tates information technology professionals, said Don Blough.

vice president of MIS at Food-

maker Inc., a San Diego com-

or restaurant chain.

my that owns the lack in the

"It's hard to even know what

to believe," Blough said. The

than expected, said

Some see ploy in NT rename

· Users resigned to even later arrival of OS

мисковотт совя:'a decision to name Windows NT as Windown 2000 has some corporate users preparing to wait even longer for the release date than rosoft is publicly, predicting. "I had doubts about it coming out in 1999 before the name change," said James Gra-ham, a network architect at

Atlanta-based BellSouth Business Systems Inc. They're trying to cushson the low a little bit in case the dates slip. But I think it would be better to wait til 2000 anyway because people will be too bury with year zooo issues to go

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The wait will leave corporate And Novell's NetWare 5.0

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yers with a couple of choices: wait for NT so while sticking with Windows 95 or 98 or mov ing to NT 4.0; or contemplate other serves-based operating systems, such as Novell Inc.'s tWare 5.0 and Sun Micros ems Inc.'s Solaris 2.7, which

Indeed, while Microsoft con-

tinues to ponder a ship date. other operating system vendors are hitting the ground running. Solaris last week (CW, Oct. 26). IBM is teaming up with The Santa Cruz Operation Inc. and Sequent Computer Systems Inc. to build a merged Unix for the

> As for Graham, he said at this point if he needed more NT. he wouldn't wait for NT so but would buy NI'

But he'a also in the process of switching over 68 application vers from NT to Unix.

He said the move is based on the fact that Unix scales better. Analysts at Internati Data Corp. (IDC), a sister company to Computerworld, and Forrester Research Inc. predicted "Even if a company has plans to go to NT 5.0, the majority of organizations are going to wait a year to 15 months to implement it," said Bill Peterson, an analyst at Framineham Mass. board IDC

"Now that Service Pack 4 for NT 40 has shipped with 2 lot of cool stuff. NT 40 is a solid product with an impressive installed rate," he added. Isaac Applbaum, CEO of Concorde Solutions Inc. s subsidiary of Bank of America, said renaming Windows NT was a

great marketing plan.
"They're bedging their bets."
Applbaum said. "It's a brilliant idea. If NT 50 comes out in 1999, they're big wunners. If it comes out in 2000, they can say, 'See, that's why we named

it Windows 2000." In Ballmer's keynote at the recent Networld/Interop '08 conference, he said the fact that NT 5.0 still doesn't have a ship date bothers him. "It's still a ways in the future, and I feel

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of a date reference from various executives, an official ship date still hasn't been set O

HOLDING STEADY Have recent announceme

company to reevaluate or modify its plans for Windows NT on the server?



Don't know

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Sales automation projects still struggle

▶ Benefit rates low, but users say key steps can make it work and Scottsdale Arm.based SalesLogor By Matt Hambler and snap up the latest upgrades

Five users last week said they re eager to in out new versions of sales software surs acromatios projects fail more being released today by Carson City often than not yet ever-optimistic com-New-based Borealis Technology Corp. names continue to Install the software

Those companies are two of the

dozens of sendors competing in a \$1 bil hon market expected to grow to \$5 bilfrom by 2003, analysts said [CW, April 6] Sales force automation includes every-

thing from contact management software to high-end systems that link managers and the sales force to the marketing department, support staff and even data warehouses

At least 60% of sales automation projects fael to produce measurable benefits. and more than 75% of the businesses that install such systems are dissatisfied. according to Gartner Group Inc un Stamford, Conn.

All five users interviewed said they're aware of the inherent dangers of sales outomation projects. But they said they had increased their odds of success by taking two critical steps: training sales agents well and getting upper management involved early

'Yes, installing this technology is a business change, and we got several corporate sponsors because we knew it had to be a cultural shaft," said Bruce Mabel. manager of marketing data systems at Heidelberg USA Inc. in Kennesaw, Ga Mahel and it beloed that is sales people were insolved in the pilot test of Borealts' Arsenal software, which is now used by 130 sales agents in 11 offices. It's too soon to measure any produc-

truty gains at Heidelberg, but the praction has been "pretty positive," Makel cool Five users said they increased the

force automation projects by tax sales agents well and getting upper management involved early

At the Boston-based furniture retailer Office Environments of New England, lennifer Roberts was hired only two months ago to oversee implementation of SalesLogor's Sales Information System for so furniture sales agents. The project's in its infancy, but "We

have high hopes for the benefits it will provide for sales reps and for giving management information about the sales cycle," Roberts said The section will count abress for

salespeople to make follow-up calls on customers and will track which marketing brochure's get the most customer response

Without a product to track your results, you are shooting in the dark," Roberts said.

Sudhir Bayay, CHO at Cyrk Inc. in Gloucester, Mass., said SalesLogov had performed well for nine months with se agents selling promotional items nation wide 'The issues of its success are not technical and are more organiza tional and who's going to see the value." he said. O

MOREONLINE *

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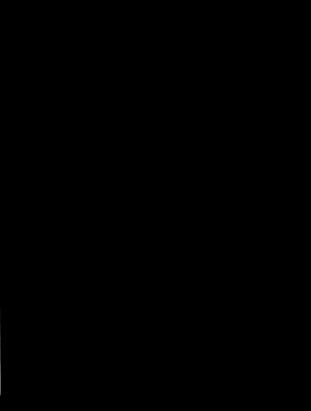
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Sales automation projects still struggle

Benefit rates low, but users say key steps can make it work and Scottsdale, Ariz-based Sales Logiz

By Matt Hamblen SALES AUTOMATION projects fail more

and snap up the latest upgrades. Five users last week said they're eager to try out new versions of sales software being released today by Carson City. often than not, yet ever-optimistic com-panies continue to install the software New-based Borealis Technology Corp.

Those companies are two of the szens of vendors competing in a \$2 billion market expected to grow to \$5 bil-lion by 2003, analysts said [CW, April 6]. Sales force automation includes every-

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It's too soon to measure any productivity gains at Heidelberg, but the reaction has been "pretty positive," Mahel said



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provide for sales reps and for giving management information about the sales cycle," Roberts said. The system will sound alarms for salespeople to make follow-up calls on customers and will track which market-

ing brochures get the most customer Without a product to track your results, you are shooting in the dark,"

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Information

Building Tomorrow's information Systems

FRANKLY SPEAKING Don't forget the users

months after it was purchased, the new system soured FedEx's relations with its

3.200 member pilots union. That may lead to much more stringent work rules

in a new contract now being negotiated — or, if things really get messy, a strike

All those companies forgot

to talk to users - the peop

who would be affected by the new system. That lapse will

cost them millions of dollars. And that ammeria wasn't just

Build user input

every project.

It was inevitable. It was bound to happen. Not because those IT people

don't care about their users. They do. In

one case, users were even consulted — but not in the detailed, specific way that

stupid or foolish or careless.

nto the way you do

hey just forgot. No, really, it just alipped the minds of the IT peo-ple at Federal Express Corp., retail chain Meijer Inc. and publisher Bureau of National Affairs Inc. They should have talked to users be-

fore rolling out certain new systems during the nast war. They knew it then, and they know it w. But at the time, they just forgot And as you already

know from a front-page story in last week's Computerworld ["Migra-tion plans"], those bouts of ammenia re expensive. The Bureau of National Affairs wasted \$1 million and six months on a new payroll system the

spany had to runk. Meijer had to rip out its new E-mail system - a \$3 million, 18-month-investment. FedEx may face the biggest financial hit of all from its new pilot-scheduling system. Thrown into production three

would get to the heart of how the system would fit their needs

No, it was inevitable because banging heads with users wasn't built in to the way those companies do every single IT project. Bringing in users was a priority - but it wasn't a habit, a reflex, second nature. It wasn't, in short, something IT couldn't forget.

What about you? Is your shop in line for its own million-dollar memory

Do you being users in from the start of every IT project, built or bought? Is it such standard procedure that you would require special dispensation from the CEO not to find out, directly from users and before a nickel is spent on technology, what they need and whether a new system makes more real busines

sense than what they're already

Or does that usually open a can of worms so ugly that you've never built that initial consultation in to your standard Do you bring users in again

for the dog-and-pony demonstrations and encourage them to spot what's wrong and what's missing? Do their comments, complaints and criticisums become key specifications for the new

Or do you spend your face time with users explaining that they just don't un-derstand the new system's require-

Do you test prototypes or pilot ver-sions with users early and often? Do you eliminate surprises for users as oroughly and methodically as you eliminate bugs?

Or do you just assume they'll love the hot new technology as much as you do? Sure, users can be a pain. They'll play politics, ask the impossible, give you double-talk and grumble about everything. They can waste your time, sap your energy and drive your develop ment process straight into the ground But you can't afford to lose their input - not if you want systems that will

give them, and the company, real busies value. you do every project. Make it a habit so deeply ingrained that you can't possibly

Because if you can forget, you will. And it will cost you dearly - in mostey. in time and in the trust of the businesspeople who use your systems. And you can bet skey'll remember. D

Hayes is Computerworld's staff columnist. His Internet address is frank_hopes

44 charged with online fraud

n Socorbies and Exchange Commission (SEC) filed argas appliest 4,4 peries suspected of committing film excursible fixed in 22 cases. The SEC sold the spects allegadly poddled 255 companies as good sustanests villated mentioning that they occupate are then SeC and the second of the second or set the second of the second of the second peries of the second of the second of the second are a second of the second of the second of the area as attentively interest seems.

FAA radar glitches found

Problems with a radar retiremen spigned in-stabled two meaning age at an in-traffic con-traction. It is not considered the season of the ord facility in fight. It, have caused efficient in less back of some subplaces bying to and considered and the season of the season of the horizontal efficient in the system, disblock and interest and efficient in the system, disblock and individually appeared to the season of the

Immigrant database readled

Ellis toland has began computarting the records of sy million immigrants who entered the U.S. there from July to toga, and will set up sy, workstaines for people who went to trace their rects. Volunteers from the Chesch of Jeans Civil et Catterdo Senior see exten-ing the information into a distribute. The project, by Status of Liberty-Ellis Island Foundation Inc., will cast 15y million. The foundation has reised \$11-51.

JavaScript bug hits Netscape

es Corp. last week logge ape Communications Corp. It ript bug that affects its Comn ript bug that affects its Communicator 4.07 and released Communicator 4.5 Web browser soites. ug, which allows a hacker to read the contents owners elected action of decicient in season of the content server bags that have been legged in recent mention fetacape spokesman said. Netrcape is working or in. In the meantion, users can turn off javaScrip on they on to underson these or ... on they go to unknown sites or clear their cac before Web surfing, a Natacape spokesmen s

ARACA! Customer: Dr Pepper/Seven Up Inc., Pisno, Times

Prime contractor: Computer Sciences Corp. (CSC), El Segundo, Calif. Termes Say million, five years Highlights: The largest noncola soft-drink

any in North America is outsourcing the support, maintenance and upgrades of its SAP applications so it can focus on its core soft-drink business. Fifteen IT employees will be transferred

Cyberspace shuttle traffic

CNN Was servers experienced their register over legister. It set Thursday when the space shottle Discovery learnful with john Clenn abourt. Around 215 p.m. the CNN site Inselfied 494,000 hits per minete, compared with \$40,000 hits per minete when the Starreport detailing President Clinton's sexual encounters with theirs. Learningth was released. Breadcast.com in

Novell wins piracy case

all Inc. in Provo, Utsh, last week was sur \$800,000 in damages in its software piracy sub-against Atlants-based Galatech Inc. Novell seed the company in November last year, alleging that Galatech sold and distributed counterfeit copies of Novell's Net

Bulk E-mail sold at online site

A New journy interest service provide said he will content to see Edy's colour action. We aim to be will content to see Edy's colour action. We aim to see It has been action. The see It has been action of the It has been action community. If a Edyl systems administrator at Computetes information Network, said has been seeding but it and in the see It allow the American action in the see It have been action. If a see It have been a the It has been a the It has been a the It has a the It has been a the It have b

SHORT TAKES Strong sales in the company's strange business halped Westborn, Manx-hazed Data General Gorp, sin out a modest prefit of \$2,7 million on revenue of \$9\$2,7 million fee the forest querier offices 1958, which and \$942.61. Lapsto Syethams late, amounted last week that it will acquive PalTTime Software late, in a stack deal valued at \$59 million. Pals Alm, Calif. stack deal valued at 3-by million, Falls AMS, LEMP, based Lagists and server beckup applications Sin Maten, CAEC-based Fulfilmes makes software for server clustering and management. . . . Clean I. Habers, 35, the former CO at N. E. Bett dereoup Co. In San Astenio, has been manual senior vice president for over business development at Wal-Mart Steres line.

WEB

MONEY TALKS

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100% of U.S. money-center banks use Lotus Notes' and Domino" because they provide the most stable and secure platforms for sharing trainloads of highly confidential information. It's also easy for them to develop custom applications that help exploit the efficiencies of the Web, Add to this the fact that they've saved millions while improving customer service and the whole deal speaks volumes.



An IBM Company

Putting in-store service online

 Nordstrom will let customers E-mail a personal shopper to find items looking for on the site, they can By Sharon Machlis

CAN HORDSTROM INC., the Seat-tle-based retailer that's become synonymous with stellar cusmer service, transfer that gittering reputation to its new online store? Electronic retailers

everywhere will be watching. *Greater companies than Nordstrom have been attempting to mimic the same image they have off-line, and it's not eusy," said Julia Pickar, an analyst at Zona Research Inc. in Redwood City, Calif. Indeed, it's tough to recreate

a smiling salesperson who offeet you a seat, brings you a soda and picks out some suits and matching ties while you wait. "E-commerce takes place in a very different venue. By its nature, E-commerce has its limitations," said Nordstrom rpokeswoman Paula Stanley. Instead, the department store hopes to provide what online shoppers appear most eager for.

translation of service in-store.

E-mail Nordstrom Personal Touch, where a personal shopper will scour a brick-andmortar store, E-mail possible choices and then ship out a selection - all at no extra charge Needstrom com checks its inventory in real time, so once an order is placed, the item can be reserved from stock. If it isn't in stock, users are notified right away. That was done via cus convenience and case of paviessoftware that links up IBM's tion. *Our goal is to provide a merce merchant server she said. For example, if shopwith Nordstrom's Macs legacy pers can't find what they're direct-mail system. The site also common customization features, such as gift reminders and personal-ized address hooks that store informatico on clothing sizes and

perferences. The good strom is that

state of online or and care is extremely poor," raid Nicole Vanderbilt, an analyst at in New York, "so the opportunity to differentiate your storefront based on that is fairh large. However, it is difficult to

about trying to anticipate cus-tomer needs as "the smiling safesperson who greets the cus-tomer," she said. "By taking their understanding of the cus-tomer online. Noedstrom has s

with inferior code

saging vendors responsible, one Looht member said, s claim

supported by users at the con-

For example, one user from a large East Coast insurer won-

shot at good execution. . . . Their best bets are strong telephone and E-mail support with are times, sor thing that will require significant investment." Nordstrom is starting out

with limited merchandise offerings - about 53,000 inventory items, compared with several hundred thousand in a typical store - but plans to add more in the next few months.
"We don't know what the customer wants. We have a lot to trom has s learn," Stanley conceded. Cl

Group to demo embedded Java

Br Carol Slive

MAGINS THE sight of a dozen

or so robotic arms picking up objects and handing them off to At this week's Embedded Syn tems Conference in San Iose. Calif., a vendor group led by Hewlett-Packard Co., 18M and

Sun Microsystems Inc. plans to use robotic arms to demonstrate that Java can be used in real-time embedded systems. Java potentially can provide s

benefit for companies that need embedded devices with real-

grammer,* said Anne Thomas, an analyst at Patricia Seybold Group in Boston, noting that real-time programmers are s

"And Java is such a highly productive programming lan-guage that they're going to save time any time they have to write an embedded spplication," Thomas added.

John Swartzendruber, manager of enterprise architecture at Eli Lilly and Co. In Indianapolis. said it can be tedious to do custom development for his company's myrad lab devices, Java-enabled embedded desires

could ease this. "It is not a simp chore to take a series of devices from different manufacturers and get them to play together. Anything you can do to manage the iqueness of this equipment would

Tomorrow's demonstration significant for Java eggagamers, venparticipants show the technol

ial to run on a variety of platforms, operating systems and virtual machines that interpeet the Java code. The significance of the demo

Instead, they is that you get write once, run anywhere properties, which is crucial to embedded system industries because of the very. very large number of devices. de" that are cessors and boards* that ex-said Greg Bollella, an em-

Critics argue that the realtime portion of the applicati isn't written in Java. 'The demonstration does not illus-trate Java being used for real time operations," said Charles Fitzgerald, a group product manager at Microsoft Corp., which has been participating in the real-time Java group's work. But Thomas said having the

majority of the spplication written in Isva would be an enorporting all the code. But hashing out the specifica-

tion could be s thorny process. A group of about 45 organizaions - including vendors and academics - has been working since lune on the requiremen for a real-time extension to the Java platform. The National In-stitute of Standards and Technology has been tracking the efwhich members have hailed as open and inclusive. Java's creator, Sun, wants that group to proceed through its

formal, auditable standards process, which is now under discussion among licensees and nonlicensees. But many remain uncomfortable with Sun's control and the intellectual property estrictions ICW, Oct. 191 Some nonlicensees alrea

ore saying they don't think ey'll be able to sign Sun's puripation agreement. We're looking for openness and a vendor-neutral process," said Doug Higgins, president of nics Inc. in Ames, Iowa 'If you have to sign a [nondi sure agreement) and a Sun b cruse, that's not very open from Hacker group blasts E-mail vendors for shoddy code By Roberta Fusaro the message, but you're not get ORIANDO, FIA.

a Lopht member said. Iso Gardiner-Smith, vice A WAYE OF highly publicized Email bugs came and went this president of messaging at Cred-it Suisse First Boston based in mmer, but vendors and users still haven't learned their lesson,

Zurich, said the bank wornes about E-mail security but has a said members of a Boston stringent usage and configurabased hacking group at last week's Electronic Messaging tion policy in place. The probless is, nothing really bad has happened yet. Business man Members of the Lopht Heavy agers are naive about computer Industries - an underground things; they base their risk

group of volunteers who try to analysis on what's gone before reveal holes in popular hard-- which is nothing," he said ware and software programs so Driving the product makers vendors can fix them - said is the need to speed up product cycles, even if that means issuvendors still are rushing E-mail ing flawed software or hardware and other products to market that will require bug fixes later, a Lopht member said. But users aren't holding mes-

But a Microsoft snokesma who asked not to be identified told Computerworld that all prod-ucts, including its messaging wares, go through a rigorous beta-testing period from a variety of testers before they're released. He also said the compo oy "tries to be open and hones with customers' about any product flaws. Once glitches

dered if the security measures would detract from the speed of her firm's business-quality E-mail system. *People don't want to wait for their E-mail," said the messaging manager, who requested anonymity. But Lopht panelists noted that stronger se-curity is worth the trouble. "OK, have been reported by users or discovered in-house, fixes are typically posted between 24



bether medical monitor, telehone or gas pump — because sey can change the task the device performs without having to rip out the software and rewrite the program. Instead, they could download a java application to the device.

You no longer will need a real-time programmer to devel-op an embedded application. You can just go hire a Java pro-

ting a virus in the attachment,"

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The issue is moving mountains of paperwork quickly through massive organizations. Drug companies, the FDA, managed care corporations. All with different desitiop and server platforms. All around the world. Eighteen of the world's 20 larget planameuratical companies use tours Notes' and Domino' because it has helped them save millions and get their products to market faster. And that makes expression of the control of the c



An IBM Company

CIOs share retention tips

· Call for building community for IT staffers, better college courses based company let a group of relatively new IT employees create a grassroots organization

By Thomas Hofman STATTLE

CIOS AT THE SIM Interchange 98 conference here last week ared their best tips for dealing with the industry's IT labor shortage. One of the most over-

strate technology department feel like A July survey of 98 members of the Society for Information Management (SIM) revealed that one of the main things IT

professionals seek in an em-

over is a sense of community

One company that has taken

that message to heart is Kraft

Foods Inc. The Northfield, Ill.-

► User's hope simpler

ann carry is selling simplicity

but some Microsoft customers aren't buying his pitch.

"Simplicity." joked John F.

Rudin, CIO at Reynolds Metals

Co. un Richmond, Va., "is com-

ing out in the next release

Corp.'s revenue

for the next five

years, the 'buggest

initiative" at Mi-

crosoft is making new versions of

easier to use, said

Chairman and

formation Man-

CEO Bill Gates.

Gates, the

means fewer bugs

By Thomas Hoffman

and Allen E. Alter

called the New IS Professional share ideas about career develpoment and do volunteer work. The key to the council's success, said Kraft making SIM INTERCHANGE CIO Jim Kinthe information '98 CONFERENCE ney, is that senior management "had oothing

to do with it - it was developed entirely by our staff." Other companies, auch as Unisys Corp., let IT staffers use the corporate intranet for career development. The Univers intranet has a Career Fitness Center, where technologists can click on scons such as "Skill

Shaper" for tips on how to home

Gates heralds easy-to-use products

lets users automatically "requir"

broken applications and remove

sela, a Microsoft program man-ager who demonstrated some of

the new features to SIM confer-

Gates said companies need

simpler products because they

only get a small percentage of

the value out of their informa-

The goal for corporate IT de-

s. Gates said, should

tion technology) investments

nased ones, said Chris Capos-

Council, which lets staffers Unisys' IT organization has abrunk from double digits to single digita, said Kerry Ruhl. vice president of human re-

skille

sources technology. The SIM survey found that financial compression continues to have the greatest influence on employee retenti-But keeping people often reires more than just meeting offers of 20% salary increases said Paul Ayoub, a vice pre dent at Cigna Corp. in Philadelphia. "401(k) plans are nice, but

Greenbrier Cos., a Lake Os

cars. Gates' state ment. Alexan

estand IS."

Burgers, manager of warel

wego. Ore., maker of freight

der said, "shows how he doesn't

In his keypote, Gates said

tems at DSC Logistics Inc. in Des Plaines, Ill., said she would be satisfied with seeing "fewer

errors" in Microsoft's software

before then. Gates continued to

their business and technical

Since the system was de-

ployed last fall, turnover in

clincher," he said. In a position paper, SIM urged IT vendors to work together on product compatibility and reducing complexity, which would lessen the burden on already-thin IT staffs. few companies offer pension SIM also recommended that nesses work more closely with schools to make sure their courses align with corporate

plans, and that can be a real

Kraft Foods' CIO Jim Kin-ney chops IT turnover to The problem for folks such as 5%, Page 71 Anne Wendt is that universities don't carry courses such as

Anti-Slacking 101. Wendt, president of The Wendt Group Inc., a New Yorksultancy, recently had to fire a handful of developers who were

ofing off and failing to cor plete their assigned projects. I'm paying these people \$100 an hour since that's what the market dictates, and they're off surfing the Web" and doing other nonwork-related activities. she said. O

Alles E. Alter contributed to this report.

MOREOMETINE .

For more coverage of the IT labor shortage, visit Com-puterworld online.

ms as a decision-support

lors have announced sup

data standard, but several said

The sharing of meta-data is

ey would also support the competing standard if users

that five years from now, there will be computers that "can see, listen and learn." But Jane Oracle does warehousing

to-end data warehousing story," Information Inc. along with its Dynamic Balanced Scorecard said Robert Craig, an analyst at application Hurwitz Group Inc., a Framing-The latest edition of Oracle's ham. Mass,-based consultancy. Data Mart Suite, which com-

"It puts Oracle in a much bines Oracle8 with design, stronger position than they ever were in before to be a major building and reporting tools. player in data warehousing. The *Oracle Application Business Intelligence System, a business only piece that sounds like it'a missing is data-mining capabili-ties — which they'll probably intelligence warehouse that rtner with other vendors for." system for Oracle applications. An alliance with IBM and

"This is definitely news we've been waiting for," said Dan Unisys Corp. on a standards Vlamis, president of Vlamis Software Solutions Inc., a proposal for a comdata warehouse interchange for Kansas City, Mo.-based consulmat called XMI, which lets detancy. To have integration from velopers exchange code and meta-data over the Internet us-Express through Discover will ing a common standard. Most On Tuesday, Oracle also will port for Microsoft Corp.'s me

announce the following: The acquisition of One Mean ing Inc. and its Marlow metadata management software. The purchase of the Aptivo

line of analytical, activity-based costing software from Pricewa useCoopers. tion of Graphical

wanted it. the Oracle repository by its Discover, Express and Reports

dodge the question of when customers should expect Win-With its Windows, Office and be to create seamless interfaces BackOffice products expected to represent 80% of Microsoft so that all customer and product information can be easily dows 2000 to ship. He said 300 Companies need simples products because they only get a small perproducts centage of the value out of [their IT] investments." - Bill Gates keynote speaker at the Society for Inat SIM conference agement (SIM) In-

'08 conference here last week, talked about how Microsoft's push to make its software less complex is evident in new prod-uct development for forthcoming packages such as Windows 2000 and Office 2000.

For example, Windows 2000

accessed across mul Placing the onus on IT org nizations to simplify access to that information irked one con-

ference attendee. "Wouldn't we [in IT] have done that already if we could have?" asked Norm

es have sig "rapid deployment" program "to show us where we are with it." Microsoft is still targeting the first quarter of next year to re-lease Windows 2000 bets 3. Gates said. The timing of the mercial rollout, be said, is

Users seek fix for data warehousing woe

By Stewart Dec

VZHDORS MAY AS preoccupied with Microsoft Corp.'s planned entry into data warehousing via the imminent arrival of SQL Server 7, but users attending this week's Data Warehousing Institute's Leadership conference in Oslando, Fla.

are much more focused on their own projects and problems.

Meta-data management, data mining

rechniques, warehouse development strategies and warehouse Web interfaces are what people will be asking and learning about. How to sessions are always well-attended at such conferences because of the "unaccause of the unaccause of the unaccause

ceptably high failure rate of data warehouse projects," said Robert Craig, an analyst at Hurwitz Group Inc., a Framingham. Mass.-based consultancy "Many people

want to find out how to fix what they have and get some usefulness out of their investments."

George Trudel, a business and technology consultant at Blue Cross/Blue Shield of Rhode Island in Providence, said be's always interested in learning more about data modeling stategies and mining and intelligence tools for the same russon.—to get better results from his warehouse. "I'm looking at what I can do or use to streamline the process of getting more useful data," Tudel said.

META DATA OR DIE Meta data — the summary informat

about what data is in the warehouse is a hot spic. "Meta data is like the oil for an engine." You can forget about in for a little while, but without comprehensive, synchronized meta data, your warehouse will die," said Wayne Eckerson, vice president of setchpology services at the Data Warehousing Institute. Users are starting to recognize that

the combination of meta data and modeling will let them understand more about how each of their systems fits together with the goal of making a connected enterprise. Craig said.

Meta data is a hot topic right now because more and more long-term business decisions are being made on the basis of data warehouse data, said Michael Abbey, persident of Michael Abbey Systems International Inc., an independent consultance based in Ottawa.

"People analyzing this data have to be intimately familiar with what the data means and how it can be applied. And meta data is key to this intimate understanding, "Abbey said.

The finalists selected by conference organizers as Pioneering Products of 1998 also show how much attention is being paid to meta data. Tools for meta-data management and administration captured three of the six finalist spots.

Plenty of products also have come out recently that help users populate their data warehouses with caterprise resource planning (ERP) system information. "We are certainly looking into this." Wareh

but haven't come to any decisions yet,"

Trudel said.

"Most ERP vendors are way behind in providing these tools themselves," Craig

providing these tools themselves," Craig said, so users are turning to independent toolmakers to ease the process. Warehouse administrators also are finding Web interfaces to be a dream come true. "With a Web interface, we can give more users access to data with next to no maintenance or administrative costs," said Larry Costello, director of financial information systems at Textron

nancial information systems at Testron Inc., a \$9, \$ billion multi-industry company based in Providence. We had tried a client/server front end, but it was a bear to maintain and required lots of redesign any time we simply realigned a division." That's why Costello said he is looking for Web-based access tools. O

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Notes update to introduce browser feel

Different look, capabilities designed for new users

By Roberta Fusaro LONGTIME LOTUS NOTES users and developers are in for a shock - and additional training -- when they see Version 5.0.

which ditches the familiar desktop scons and worksnace. The good news is that the new interface is similar to a Web browser, which should make it easier for newcomers to learn Letus Notes.

Lotus Development Corp 's decision to adopt a beowser design for Notes 5.0 wasn't an accident More than an million people know how to use Notes, but hundreds of millions know how to use a browser. Lotus officials said. A beta version of Notes 5 o has been out for a few weeks: the commercial release is due by year's end. Version 5.0 will have real time messaging and new search capabilmes built in. Notes' familiar icon-based workernee will be replaced with an opening page that looks more like a Web page - including a navigator bar, a series of bookmark folders and forward. backward and refresh buttons End users will, however, have the option of reverting to the old workspace

Nina Burns, president and CEO of Creative Networks Inc., a consultancy in Palo Alto, Calif., said the installed base of Notes users upgrading to 5.0 will

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there fold. Cycle times have been reduced be over 70%. As Dr. Curlander ups, "Record 1D. Edwards is a company that loops to And that is n. The ID Edwards promots to customers, we're better able solution is key to helping Lexinark tokerpoon.

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ange and Hotes/De \$0.58 \$1.40

require a significant amount of retrain ing because of the real-time messaging and other new functions - but not as

much as if the new user interface weren't like a Web browser. Divisione Notes mere may need less training with the new version because of

the familiar Web interface, she said, "so n's probably a wash."

WHAT EFFECT? Corporate information technology executives seem concerned about the effect on their employees "We have beta copies of

Notes c.o. but I just hope it doesn't get too complicated. We have some part-time developers, and "I just hope [Notes see them get overwhelmed 5.0] doesn't get said Steve El-

denschenk. too complicated." Notes admin trator and develsaid American Family can Family Insurance's

Group in Madi-Steve Eldenschenk son, Wis. But from a

Web application development side, the user interface will make Notes more fun. he said. The retraining will be significant for the bundreds of Web developers at KeyCorp, said Charlie Lougheed, an intranet/Internet Web developer at Key Services Corp., the bank's IT arm in Cleveland

That's because Notes has a revised management console, among other

Developers who are familiar with cur rent versions of Notes and Domino will have to retool a bit. Lougheed acknowledged. But, ultimately, the simpler interface will make it easier for a new developer to adapt to the system and start coding immediately, he said. Cl

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ERP screens drive workers nuts

CONTINUED FROM PAGE !

The order-entry delays forced Hydro Ago to throw more mannower into its Canadian stores to handle the spring-planting business rush Even information technology staffer? overseeing the R/s rollout were pressed into taking orders. Heler said At least 10 other biners of ERP applications said their end users also base wrestled with the demands of R/s and rival packages, which are much less

said Haler and other executives implied in ERP projects For example Soult Ste Marie Ontano-based Algorna Steel Inc. started to use PeopleSoft Inc's human resources soft ware in August But personnel managers still often go to the steelmaker's old mainframe application to get the data they need, according to project man-

ager Gary Disano They're having a hard time

order-entry times spawned by R/4 'basicalls threatened to be a showstopper for us." Hafer said. The fertilizer maker put off installing R/3 at its U.S retail outlets and began to look at writing

a custom order-entry application or binning third-party software Hafer said he hopes the problems will be solved by an up reade to the new R/s a.o. wh he said appears to be more flex-

rble about moving data fields to a single screen But Hydro Agri also ran into

complexity problems with R/1 in its warehouses. SAP's user interface was confusing to loading dock workers who enter the quantity of chemicals coming in or going out Hafer said. So the company is rolling out a simplefied, homegrown application that shields the users from R/y. Those executors and others

said the promised benefits of ERP - such as year 2000 complance, corporatewide integraion and better tracking of key business data - make the pain of both installing the software and petting users up to speed on it more bearable. And ERP vendoes aren't

ignoring the usability complaints For example, PeopleSoft interfaces insich easier to customize, analysts said. Oracle desurned an all-new user interface. for the sales and marketing appheations it shipped this year. And SAP recently yourd to sazz up R/s and make it more user-

PREPARING THE MASSES FOR ERP Tips from ERP buyers and analysts on preparing end users for the software: Expect to spend 10% or more of your total project budget

on end-user treining I Treining mey have to begin four months or more before you go live

I Stert with general classes on the way ERP works, not

job-specific treining I Trainers must be versed in business processes es well as

the technology I End users mey need three to six months of ectual usage to become proficient

 Be witting to change employee productivity measurements to fit the softwere

friendly (CW. Sept. 21).

face in." he said. "The screens

have been the last part of the

nackages without exception ap-

proach things from a system

of view," said Eric Schaffer,

president of Human Factors In-

ternational Inc. The Fairfield.

lowa, firm does consulting on

user-interface design

draine them nuts."

court of view, not a user point

The developers of these

whole process.

In many cases, ERP projects But crasing the sins of the are automating parts of a company that have pever seen a PC past won't happen overnight. said Jim Shepherd, an analyst at or even a dumb terminal AMR Receased Inc. on Cam-"A fully integrated ERP sysbridge, Mass. ERP vendors type tem is not easy to learn," said cally have "designed from the database out, not the user inter-

Steve Hunt. R/3 project manager at Purina Mills Inc. in St. Louis, "And we have more people entering data than ever before. We're taking folks who have recorded some information on pieces of paper and

At Cinconnati-based Procter & Gamble Co., one of the biggest users of R/s, better productivity in sobs such as order entry and receipt of raw materials isn't a primary goal, said lack Leone, director of communications, organizational change and training for its global SAP rollout. The real benefits are for business planners, materials man-

putting them on PCs

That forces users into productivity-sapping screen clicking and "window thrashing" that requires them to constantly switch from keyboard to mouse Schaffer said. 'The software agers and other users "farther drives people back and forth down the line," Leone said. and back and forth, and it's Front-end data entry requires more effort now."



workers, such as Pate Winkler, from the complexity of R/3

tailored to individual business needs than the homeurown software that usually came

As in Hydro Agn's case, that can force workers to hunt through multiple screens for data fields that they once found in one place. Many companies also change their business processes to better fit ERP applications, compelling users to fearn a new way of doing their jobs at the same time they're trying to master the software

a permanent negative impact on some parts of a company." said David Dobrio, an analyst at Benchmarking Partners Inc. in Cambridge, Mass who also has worked with R/s

Until recently, many companies worned more about the coroplexity of installing ERP applications. But ease-of-use problems are gaining a higher profile as more projects go live and as sendors try to broaden their reach to occasional savers. such as business managers and salespeople

For end users on the ERP firmy line, it can take as many as six months of live use to pet comfortable with the software. teething on PeopleSoft," he said. Workers have to contend with a dozen PeopleSoft screens

on the old system, which remains ording while Algoria works on an installation of Pen pleSoft's payroll module After A-dec Inc. installed Base Co's financial and manufacturing applications last year

calls to its help desk shot 64% higher than a 1,500-com average. More than half the calls were related to the Baan software, A-dec CIO Keith Bearden said. 'That tells you right there that it's not an intuitive application," be said. And Baan isn't the only one, said Bearden

and Oracle Corp.'s applications. A-dec. a dental equipment maker in Newberg, Ore. later discovered the Basis system was still counting product inventories that had been shapped to customers. Warrhouse employees had entered the necessary inventory transfer data. Bearden said but they had to go to another Baan screen to confirm

the transaction - and the software didn't prompt them. At Hydro Agri, the increased

Surveys show a training surprise

onies aren't fu ared for the training regi en FRP software req ording to a pair of recent

Of 150 sites int ng Partne Inc. in Cambridge, & 15. 41% listed the an et of trai d as the big

And 17 of 50 cor ster Research Inc. in Cam ige, Mass., that training and r ERP dep ee solf or more over buds (see chart).

me back to haunt com nies," said Tom Gormley, an Puring Mills Inc., wi ling SAP R/3 at 56 animal

months in who os them spend up to a5% of eir work time learning the rare, said Steve Hunt St. Louis-based company A group of finance w

se plant spent seven he or day in training during the val month, with m ng in extra hours to o ng put off until later.

Even so, getting used to R/3 can take and of actual use, Hunt said. "It's not easy to switch Ito R/s) from a 30-year-old mr

sed front end that has just ne screen for enti le think you're making

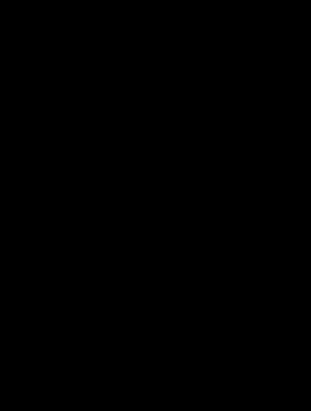
How close was the cost of user training and other ERP deployment expenses to your oneinal estimate?



10% to 50% ab Within 10% of expertations

Nore than 10% t Don't know

servened in Aure



ERP screens drive workers nuts

The order-entry delays forced Hydro Agri to throw more manpower into its Canadian stores to handle the spring-planting business rush. Even information technology staffers oversee-ing the R/s rollout were pressed into taking orders. Hafer said. At least 10 other buyers of ERP applications said their end the demands of R/3 and rival packages, which are much less said Hafer and other execu involved in ERP projects. For example, Sault Ste. Marie. Ontario-based Algoma Steel Inc. started to use PeopleSoft Inc.'s human resources software in August. But personnel managers still often go to the steelmaker's old mainframe application to get the data they need, according to project manager Gary Disago

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grade to the new R/3 4.0, which

They're having a hard time a single screen complexity problems with R/3

> and Baan have made their user faces much easier to customize, analysts said. Oracle denigned an all-new user interface for the sales and marketing applications it shipped this year. And SAP recently vowed to jazz up R/s and make it more user-

PREPARING THE MASSES FOR ERP Tips from ERP buyers and analysts on preparing and users for the software:

Expect to spend 10% or more of your total project budget on end-user training

8 Training may have to begin four months or more before you go live

Start with general classes on the way ERP works, not job-specific trais ners must be versed in business processes as well as

End users may need three to six months of actual usage to become proficient

8 Be willing to change employee productivity measurement to fit the software

In many cases, ERP projects But erasing the sins of the are automating parts of a corr

pany that have never seen a PC or men a dumb terminal. "A fully integrated ERP system is not easy to learn," said Steve Hunt, R/3 project man-ager at Purina Mills Inc. in St. Louis, "And we have more people entering data than ever re. We're taking folks who have recorded some information on pieces of paper and putting them on PCs.

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wifty of D/1

red to individual business needs than the homegrown software that usually came before them.

As in Hydro Agri's case, that can force workers to hunt through multiple screens for data fields that they once found in one place. Many companies also change their business processes to better fit ERP aparm a new way of doing their jobs at the same time they're trying to master the software.

That one-two punch can have 'a permanent negative impact on some parts of a company." issid David Dobrio, an analyst at Benchmarking Partners Inc. in mbridge, Mass.

Until recently, many companies worried more about the complexity of installing ERP applications. But ease-of-use blems are gaining a higher profile as more projects go live and as vendors try to broaden their reach to occasional users such as business managers and

For end users on the ERP firing line, it can take as many as six months of live use to get comfortable with the software.

teething on PeopleSoft," he said. Workers have to contend with a dozen PeopleSoft screens compared with just two or three on the old system, which remains online while Alg works on an installation of Peo pleSoft's psyroli module. After A-dec Inc. installed Baan Co's financial and manu facturing applications last year,

calls to its help desk shot 64% higher than a 1.500-company average. More than half the calls were related to the Basin software, A-dec CIO Keith Bearden said. That tells you right there that it's not an intuit application," he said. And Baan isn't the only one, said Bearden, who also has worked with R/3

and Oracle Corp.'s applications. A-dec. a dental equipment maker in Newberg, Ore., later discovered the Base system was still counting product invento-ries that had been shipped to ers. Warehouse employees had entered the necessary inventory transfer data. Rearden said, but they had to go to

ther Baan screen to con the transaction — and the soft ware didn't prompt them. At Hydro Agri, the incr

Surveys show a training surprise

friendly (CW, Sept. 21).

past won't happen overnight.

said Iim Shepherd, an analyst at

AMR Research Inc. in Cam-

bridge, Mass. ERP vendors typi-

cally have "designed from the database out, not the user inter-

face in," he said. "The screens

have been the last part of the

"The developers of these

ckages, without exception, ap-

proach things from a system

point of view, not a user point

of view," said Eric Schaffer,

president of Human Factors In

ternational Inc. The Fairfield,

lowa, firm does consulting on

user-interface design.

driving them nuts."

and 'wind low thrashing" th

whole process



On one hand, your server operating system is about keeping the network up and running.

There is, however, the other hand.

Microsoft* Windows NT* Server 4.0 runs both your network and your business applications. This is an important distinction.

It means you won't spend your days figuring out how to oobie together business solutions, because more parts of your network will be tightly integrated. It means your network can do more now, do it more efficiently, and give you fewer headaches over what the future holds. It means Windows NT Server is a true multipurpose server operating system.

It all starts with seat file and print. (In fact, Windows NT Server 4,0 at 36% faster file server than NetWare 5,) T an, wan you're ready, it lets you take advantage of the latest network functions.

What ready means for you is a solid foundation, and come to grow into whatever you need down to see





From high-tech visas to year 2000, Congress acts

▶ Key bills protect Net copyrights, boost high-tech visas, curb Internet taxes and fix Y2K bugs

By Nancy Weil

IT WAS A BUSY U.S. congressional session for technology legislation, as lawmakers recently approved key bills covering protection of digital copyrights. content filtering, a ban on Internet taxes and a boost in the

nber of high-tech visas. The bills will become law yo days after being signed by President Clinton. Several technolo gy-related proposals were tacked on to the huge federal budget bill. They were approved just re the legislative session ended and were signed by Clin-

The omnibus spending bill includes \$3.4 billion in emergency funds to "fix" the year 2000 bug in agreement computer

systems.

In the waning hours of the legislative session, several lawmakers predicted that technolopy-related debates and bills will play a bigger role next year Among the laws that will take effect by year's end are the fol-

tiveness Act will temporarily increase the number of H-1B visas allowed for foreign work ers in technology. For the next two years, 115,000 such visu will be permitted instead of the 65,000 that formerly had been allowed. The number of H-18 visas will drop to 107,500 in annu and to 65 one in 2002

The act was controversial because some opponents argued that the shortage of high-tech morkers has been manufactured by companies that lay off older employees or employees who need more training rather than teach them new skills.

any legislation that didn't include more emphasis on train ing U.S. workers. The compromise bill requires that \$500 be paid per visa petition, or for a visa renewal. That will raise an estimated \$75 million for job training and college scholarships for low-income vients in math, computer sci-

ences and engine The unpending law also provides layoff protection for U.S. workers. Companies whose workforces consist of 15% or per non-U.S. employees must pledge not to lay off an American worker and fill the open

with a foreign employee. Such companies also may not recruit less qualified foreign workers. Copyright Act unplements World Intellectual Property Or-

nanization (WIPO) treaties related to copyrights of digitally transmitted and stored material The act was another highly controversal measure that required years to finally wio approval, following months of debate and negotiation before a compromise was reached.

Critics contend that the act es far beyond the intent of WIPO by making it a criminal offense to circumvent copyright protection measures. It also forbids the manufacture, import. distribution or sale of devices or services for circumvention. Pro-

tection measures include en-Numerous civil liberties and

industry groups also protested the act because of privacy concerns and issues related to obtuning information electronical-

en information about the on can be obta the Web sites for the U.S. se of Representatives ruru.house.gov/, and the U.S. Senate, execusiveta.gov/. The Web site for the White House

and President Clinton can be ly at libraries and through research institutions such as uni-

Objectionable material related to databases was removed from the compromise legislation. which also provides exemptions from criminal penalties for those who research and develop security measures "The year 2000 bug figured

rommently in this legis session. The spending bill includes \$3.4 billion in emer gency funds to "fix" government omputer systems. Congress also passed the Year 2000 Information and Readiness Disclosure Act, which en-

courages companies to share in-formation about year 2000 preparations by freeing them om liability over statements made about products or other aspects of company plans to fix their software or systems. The act is viewed by some users and observers as a big loophole for vendors - one that might leave users with little recourse if products don't work properly CW 0rt 161

Act prohibits new Internet tax es for three years. Also part of the budget legislation, the act calls for a commission to review options for taxing online commerce. States that have existing taxes may continue to levy them but aren't allowed to implement new internet taxes. The act was proposed both as a means to push electronic commerce and ecause the U.S. has thousands

The Internet Tax Freedo

making it difficult to determine which should apply to online The Child Online Protection Act already has elicited a court challenge from civil liber ties groups and others who con tend that the measure violates free-speech rights. The act prohibits dissemination via the In-

Last year, in a pilot prog

MetLife let a small group of em-

playees enroll in its health ben-

base. This year, the company is

letting the whole company do

the same thing through the

Web using a Domino interface,

program via a Notes front

nked to a PeopleSoft data-

of state and local taxing bodies.

Civil libertues groups and oth-er plaintiffs, including bookstores, have filed a court challenge in federal court in Philadelphia. U.S. Attorney General lanet Reno was named as the defendant because of her role as the nation's top lawyer. The Reoo-led U.S. Department of lustice has expressed concern about the constitutionality of the act, which also has become called the Communications Decency Act II. Portions of that act ular to the prohibitions in the Child Online Protection Act years ago by the U.S. Supreme

The Paperwork Elie tion Act was another aspect of the budget bill. The act establishes preliminary guidelines for the federal government's use of electronic signatures for forms submitted via the Inter nef. The measure also includes privacy provisions intended to protect the personal informa tion of electronic signature sys terms users. The act requires the U.S. Office of Management and Budget to establish policies for electronic submissions using electronic signatures within 18 months D

Well writes for the IDG News met of commercial material Service's Boston burgou.

Lotus links Domino to business planning packs

Moves to connect server to Oracle, PeopleSoft; SAP already set

By Roberta Facure

TO HELF COMPANIES build a bridge between employees and isolated ERP data, Lotus Development Corp. last week announced Domino server coonectors to Oracle Corp. and PeopleSoft Inc. enterprise resource planning (ERP) appli-

The announcement extends Lotus' ERP strategy, company officials said, so that Doming now connects to more than half the ERP applications on the Lotus earlier this year announced Domino Enterprise

Connection Services - its ERF integration technology - and links to SAP AG. Lawson Software Inc. and Infinium Software Inc. applications. The goal is for users to lever-

age their ERP investments with



an application server that pro vides directory services, security and workflow capabilities. For instance, Evelyn Franklin, a manager of information technology and human resources reengineering at Metropolitan Life

Insurance Co. (MetLife) in New York said her company is rolling out PeopleSoft human resources applications to streamline that department and is already linking the applica

The link to Domino is key. Franklin said, because People Soft 6.0 alone doesn't have Web capabilities - later versions do. but the company hasn't upgrad-

Franklin said the company will consider using the Domino Connector for PeopleSoft, when it ships early next year, for future applications such as compensation planning and letting employees update their own data in the PeopleSoft database.

In both cases, the security provided by Domino is important, employee self-service applica

the said Steven B. Weissman, doesi dent of Kinetic Information, a consultancy in Waltham, Mass... said Domino's strengths in workflow, directory services and security will complement ERP applications, but it is unclear how easy it will be to implement the connectors

Domino Connector for Oracle applications and Domino Connector for PeopleSoft applica-tions will be available in the first quarter next year. Pricing will be available closer to ship

MOREOGRAME'S



When they want the next big thing, how will you network take the news?

Let's say you've got the basics handled, then the CEO decides you need a complete communications solution. From server-based messaging to a Virtual Private Network, your solution will cross the line between your applications platform and your network OS, Microsoft Windows NT Server's unique multipurpose design will handle the crossover.

And if someone decides your future is e-commerce, or you simply decide to build an intranet, you won't need an army of coders and system managers to get you there. Why? Because multipurpose means that Web services, application services, security and management are integrated—they all work together.

So, when you choose Windows NT Server, you prepare yourself for the changing needs of today's networks.

HOT TRENDS & TECHNOLOGIES IN BRIEF Check out www.computerworld.com/more for more resources, Computerworld articles and links.

THE MAP TO IMAP

- 1986 IMAP conceived at Stanford University.
- 1967 IMAP2 defined. Client and server updated. Implemented on Unix server.
- 1988 First IMAP request for comments published in July.
- 1989 Mark Crispin, original IMAP author, hired by the University of Washington.
- 1990 Revised IMAP2 request for comments published in Avoust.
- 1991 Support for Multipurpose Internet Mail Extensions added to the protocol. Allows non-ASCI files to be transferred over the Internet. This addition forms the basis for IMAP2 beta.
- 1992 IMAP2 beta server deployed by the University of Washington.
- 1993 Internet Engineering Task Force's IMAP working group forms, IMAP implemented on VMS server, a Digital mainframe operating system.
- 1994 IMAP4 request for comments published. IMAP4 approved as proposed Internet standard. 1995 - First INAP4 server released by Carnegie
- Mellon University.
- 1996 University of Washington hosts first and second IMAP meetings. Sun, Netscape and other vendors declare support for IMAP4.
- 1997 Continued clarifications to IMAP4.1 specification. Release of two IMAP clients - Netscape Messenger and Microsoft Outlook Express - that are integrated with two popular Web browsers: **Metscape Communicator and Microsoft Internet** Explorer, respectively.

IMAP

DEFINITION: The Internet Message Access Protocal (IMAP) provides a series of commands that the mail client software and server use to trade information, it's a method for end users to access their E-mail or bulletin board messages from a corporate mell server. It lets a client E-mail program - such as Netscape Mail, Qualcomm's Eudora, Lotus Notes or Microsoft Outlook - pull remote messages from a server as easily as If they were stored on a local hard drive.

E-mail standard gains steam thanks to remote-access abilities

By Roberta Fusoro

THE INTERNET Message Access Protocol (IMAP) is a mechanism for getting information about your E-mail, or the messages themselves, from a cornorate mail serves This E-mail protocol lets users dial in to an

Internet server from a remote location and seview the headings and senders of their E-mail before choosing to download that mail from

With IMAP, users access messages as though they were stored locally, when in fact that E-mail may be manupulated on a

server miles away. Because it has that remote capa bility. IMAP is most likely to be adopted by corporate users who see roaming features as important, says Paul Hoffman, director of the Santa Cruz. Calif.-based Internet Mail Consort

industry group made up of vendors and users.

Rosming users want to leave their messages, mostly, on the server. They want to be able to go to someone obse's terminal and read mail and have access to older messages," Hoffman

says. IMAP lets them do that. IMAP is different from another E-mail access protocol, Post Office Protocol (POP), which stores all messages on a server. Users dial in to the server, and POP plons the

ages into their in-box. It then deletes that mail from the carrier Both protocols have been around for more

than 10 years. Ron Rassner, an analyst at Creative Networks Inc. in Palo Alto, Calif., says the main differ-

ence between POP (currently in Version 3.0) and IMAP (currently in Version 4.0) is that POPs offers users little control over their

IMAP gives users an intelligent E-mail store from which to review messages before down loading them - that includes choosing

whether to download file attachments. Users can apply mail filters and search agents on the server. And messages can be picked up from any ine, anywhere, Rassner says

But vendors have interpreted the ambiguous IMAP4 specification in different ways, which has led to inconsistencies among mail clients and servers, Rassner says. For example, users may not be able to read an attachment in a Netscape Mail file in the

Eudora Pro E-mail program But Rassner anticipates IMAP will gain steam in the next few years - a sort of inevitability as the protocol evolves. And those

incompatibilities among vendors will be ironed out he says "POP3 will never go away, but we might see multiserver capabilities coming our way that can handle both." Rassner says. II

SIGNED SEALED AND DELIVERED

Off-fine mode

E-mail software client pulls messages from a server to the machine where the mail client is running, then deletes the messages from

the server.

The message remains

on the server and can be manipulated at the server with client

Disconnected mode

The message remains on the server. E-mail software cooles select messages and disconnects from the server, to synchronize with the server later.

WAre there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCanu os stefanie, mecann@cu.com



(1₁1

And what about tomorrow's network? Or tomorrow Windows NT Server?

Changes are you won't immediately use every whists

you need them tomorrow, and won't get in the way on network performance today.

With future versions of Windows NT Server, similar logic applies. In the same way that having a multipurpose OS lets you adapt to new solutions, Windows NT Server also gives you the flexibility to easily upgrade when you

and bell we've included in Microsoft* Windows Server 4.0. These features will, however, be th

Windows NT Server 4.0 lets you do what's right for today, and lets you prepare for the challenges ahead.

As you take the time to make the right server OS decision, you may want more detailed information. We've assembled some new resources for you at the Web address below.

Windows NT' Server 4.0

www.microsoft.com/go/WindowsNTServer/

are ready.



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Introducing the Dell' PowerVault Fibre Channel Storage Products Windows NT* 4.0 support Dual active storage processors Up to 1GB of mirrored cache

Up to ITB of films channel storage Up to 120 fibre channel hard drives Redandarz hot-plug power supplies

When it comes to your data center, we'll say it again: You can't be too careful.

Which is exactly why you want to take a closer look at our new PowerVault Fibre Channel Storage Products. And then you'll want to take a look again. From the floor up, this high-performance storage

system is designed to reduce the possibility of any single point of failure in key components. Redundant data protection is built in through

dual active storage processors (RAID controllers). Redundant power supplies are built in. Redundant hot-plue fans are built in. Redundant fibre connections to all disks are built in. We even

designed in mirrored cache. Our engineers went over potential areas of failure twice. Then they went over them twice again.

And just because we were obsessive about protecting your data, we didn't forget about performance.

Our new PowerVault Storage Systems offer an end-to-end fibre channel solution capable of delivering up to 18,000 I/Os per second. They hold up to a full terabyte per tack. You can easily combine multiple PowerVault racks together to satisfy whatever high-speed, high-availability storage and access needs you may have.

And like our high-performance Dell PowerEdge" servers, they're available to you at a great price. Screell 1888-887 DELL and ask for our data center server account team. Or is that redundant?



Mahile relief The last bastless of PC about dity — this portable computer — may be about to take a tumble. Good thing, too.

You haul a clamay, expensive, trouble-prone

able to all corners of the Earth just so you can get a little work done on the road. You suffer lower-back pain and wear creases into your shoulder. And if that hing --- which doubles as your desktop computer back at the office - gets stolen, your company secrets are on the hook.

I feel your pain. But a couple of weeks ago, I saw called in the form of Hewlett-Packard's nifty little jornado portable. It's one of the first of the so-called Jupiter machines based on the Windows CE operating system. I suspect many imitators will follow.



Sound Samiliar)

The jornada weight a little more than a pounds and is the size of a large paperback. It has a keyand on which you can uch-type, an internal modem, a readable color

screen and a PC Card slot. HP says the batteries last to hours (a claim I couldn't prove), and it lists for \$999. There's no boot-up time There's also no hard disk, but you can stake it with

full better of flash memory. For my money, that's the way mobile comwill go. Eighty percent of business travelers do the same four things on their laptops: E-mail, word processing, apreadsheets and presentations. And there's absolutely no reason they need a small mainframe to do that. Jórnada and other Jupiter-class machines are the first to be designed from the ground up as mobile Windows machines, not as alimmed-down desistents. They're not as powerful as full-blown laptops, but

they'll do most of what you need. It will be interesting to see frow hard computer kers push jupiter machines. That market is likely to grow at the expense of laptops, which are the last refuge of high margins in the PC industry. PC makers may not push those low-cost beauties aggressively, but it's in your best interests to check them out.

With a machine like that, you might be able to leave important data in the office and take only what you really need on the road. Now that's progress!





Salary survey: Enough is enough . . . or is it?

constray FINO it amazing that Computerworld has devoted as and months to countless articles regarding how IT careers

and opportunities are skyrocketing, and then, in the course of one week, does a quicker turnaround than Bill Clinton by announcing that this phenomenon is over (*Enough is enough: Comsterworld's 12th Annual Salary Survey,* CW, Sept. 7]. It's understandable that producing a weekly IT magazine with credible articles on a consistent basis is difficult, to say the least, but

how about giving the readers a little credit with a bit more longevity on your views? James R. McDonald Amerida Hess Corp. Woodkridge, N.J. mcdonald@aesop.nagers.edu

NES FOR THE article on IS

salaries (CW, Sept. 7). Some of

Firewall review took only useful approach to security likely to let you know the results.

A s sourcour who has worked in ao years. I'd like to congratulate rayorld for the most effective and realistic firewall review article I have yet to see l'Firewalls stand the heat," CW. Sept. 7]. Gary Anthes' article took the only approach that is useful for investigating the security provided by any product. Have experienced security engineers try to penetrate it. After all, that is what will happen as soon as the firewall goes online for a business. Except the attackers

in the real world will be much less

certainly in high demand, Martin says. But he

For example, "I only have o

wants to stay in this area, and we are taking advantage that. He's probably making at least 20% hel market value for his skills." Am I the only

one who is outraged by this? Am I the only one who considers this to be immoral? "We are taking advantage of that." No, they are taking advantage of

It is telling that the Internal

Computer Security Association did

not want to participate. There is a

built-in conflict of interest for a

vendor-funded organization to

point out flaws in its members

products. A realistic expert-driver

test - such as the one Computer

werld employed - provides much

more useful information for the

consumer than a checklist-based

ishne@entrut.com

certification program. John Pescatore Silver Spring, Md.

I've worked for a company like Martin's Never again.

Mark van der Hoek Hemet, Calif. orkithkoen.com

Michael C. Ke

erwerld welcon

ters shouldn't exceed : rds and should be ad-ssed to Maryfran John ecutive Editor, Comput rid, PO Box 9171, 500 Old ham, Mass. 01701. Fax num ber: (508) 875-8931; Interne

Is neccadillo of either Bill relevant to CW readers?

WHEN I SEAD the article by David Moschella ("Two Bills trained person taking care of all of on the hot seat," CW, Sept. 14], my our networking, and his skills are feelings quickly turned to disapent. This article is on the level of The Star. National Enguir-

Even if President Clinton is guilty of what he is charged with, and even if Microsoft Chairman Bill Gates is guilty of some nefari-

out crime, to equate the two be haviors as being the same is ludi-One is an alleged personal trans ression, which is pertinent only to Clinton and his family. The other

is an alleged improper business practice, which, although overly gressive, has not been proved .If either is convicted of any viclation of the law, then and only

then will either become pertinent At that time, the Gates part of this equation will be the only one that should be published in this

publication

Resedu. Calif

E-commerce? E-business? Who E-cares?

Walid Mougayar

nyone who has finished implementing electronic commerce on the Internet, please step forward. You can now move on to electronic

business. Not so fast, please

In a pasty little intramural squabble some analysts and online businesspeople, have decided that E-business is infinitely superior as a

niker to E-com-That's misleading and distracts us from the business sals at hand. The effort to separate the

pears to have been driven by marketing motives and is dreadfully thin in sub

Yes, E-commerce already was misused, abused and confused when E-business emerged in 1996 as the new buzzword. But the genesis of that confusion rests with the particular scope and vision one

People have been saying "business-tosiness electronic commerce" since The objective is to improve or exploit unique

business propositions. upside down the old meaning of Eommerce. And when you look at those early broad definitions, it's were difficult indeed to see how they differ from the ones given today for

Here's the important thing: E-commerce, E-business or whatever else you may want to call it is a means to an end The objectives, as with IT, are to improve or exploit unique business propositions
— with the focus now being the online

world. Worrying about the definitions of those words, or about which is superior to the other, or about which is a subset of the other, is a silly little inside the belt

Consider the following fundamental tions: customer satisfaction es online customer satisfaction: eness is now online competitiveness; customer loyalty turns into electrooic loyalty; revenue translates into on-

nue; cost of business is influenced by running the online business; gaining new customers evolves into acquiring new electronic customers; and develop

new products changes to in-That list isn't depender on how we define E-commerce or E-busiess — but it's guaranteed to keep any

organization busy for the next two to We are witnessing increased E-com merce or E-business activity inside our

companies, and it's manifested by substantial changes to the buying/selling process, relentless efforts to create digital value services and an obsession with diary-like business functionality Those activities are leading to the cre ation of new types of electronic market

So guess what? We need another "E" word. That's right, electronic markets. E-markets are becoming not only the battlegrounds for market-share

dominance, but also the new locus for business activity. The opening of and participation and competition in various erms of open E-markets ultimately are the primary goal of E-commerce or E-business, and that goes beyond trying to define either one of them.

The next generation of E-markets will be open, global and based on E-business rules of engagement and interoper-ation. They include private E-business communities, open digital cooperatives. swerful market makers, electronic trad ng exchanges and agent-based market

Now do you see E-busi commerce? Or, rather, do you see several sent choices for participation in E-

Attempting to define E-commerce or E-business is guaranteed to generate byzantine debates with meaningless ori as. It reminds me of trying to answer the following question: "If one synchro nized swip ner drowns would the oth ers follows

Instead, let the question be: "What E-markets are we participating in?"O Mougayer (welid@cyberm.com) is a mar ent, a lecturer on E-mar ment consulte ket strategies and author of Opening Digi

Personal IT trainers for the top brass Michael Schrage

met a youngish guy who was unbelievably sharp about PC technology and the Web. He seemed smart and articulate about business issues, too. His academic credentials were impeccable. I took him for a webpreneur wanna-be trolling for venture capital.

Turns out he was the personal technical guru for the chairman and CEO of Gargantuan Technology Inc. Sort of a PC butter-cum-coach. Apparently, the chief rescutive was a technological ignorumus. executive was a technological ignoramus. Not that you would have heard those words from the mouth of his PC butler; he was the soul of discretion

Apparently, a savvy CIO had ass the young hotsbot to serve the CEO's every technical need and whim. The ansignment was to last a year. After that, he could pretty much go wherever he chose in the organization. Good deal: young hotshot gets terrific exposure, learns a lot. And IT is operationally hard-wired directly into the chairman's office. At Gorgantsan, the assignment is man assed more as professional developmen

an technical support. The CEO gets a loyal technical sounding board who also can reformat his hard disk. Smart.

At a time when organizations know that help desks do more training than technical support, the notion of IT creatively sucking up to the top cadre of management should have a special ap-peal. Sure, budgets are tight. Sure, re-sources are constrained. But doesn't it. make political - if not economic sense to detail a few bright IT minds to the folks who run the profit centers? To

all of those managers who comalign itself with business needs? Offer them their own, personal IT trainers. The goal should be to make husiness lives easier. And if the hotshots are asked to configure el jeji's home PC setup ... well, it's a relationships world, no? Is it risky to assign a posytniled a8-year-old to be the CEO's personal intranet tour guide three times a week You bet. Could the 33-year-old LAN man

ager probably do better things with her time than be on technical call for the 41year-old newbie general manager at the company's most profitable unit? Maybe. But I'm still taken aback by how few IT organizations have tried to turn their people into missionary resources Although it's undeniably true t

ical IT people don't have the same social skills as, say, sales folk, it's equally true that 'power users' have skills and in-

sights top managers need on hand. It's like having a tran Creatively sucking up to

top management should be commonplace!

tor for international visitors. You wi that resource on call. And, not incidentally, you want to give people a chance to become more of who they can be. To be sure, several world-class organi-stions — Chase Manhattan Bank and GM come to mind - provide PC cosc

es to bring managers up to speed. That isn't the issue. The challenge here is to see if IT organizations can build intra-corporate alliances based on people rather than technologies. That isn't way After all, how many HMO-based doctors make house calls Of course, top managers migh not play along with this prop

Maybe they don't want or need their very own nerd. Then again, that very unwillingness would send an important message to IT. My message is simple and blust: Maybe IT could be more successful with the corporation porting top managers — not just too

Schrage is a research associate at the MIT Media Lab and author of No More Teams! His Internet address is

When it comes to your network, you no longer have to settle for half the equation. With Nortel Networks? you have a choice that covers the spectrum. From data to telephorny, LAN to WMA, we offer a complete breadth of products to help you create a Unified network of business partners stained seases your needs and deliver solutions which allow your people to share ideas and information anytime, anywhere. Don't settle for anything less. Nortel Networks www.nortenbetworks.com/SVM.



Competitive advantage is for the birds

Allan E. Alter

et's give it up, once and for all. You can't achieve sustained competitive advantage through information technology. But I'm not saving the zillions of articles, speeches, books and papers on the subject should be tossed into a dumpster.

Actually, they ought to be saved until January 2000 and used as fuel if the electricity goes out. That way, we'd get some ROI out of them.

And none soon, after all the blind alleys we've paved with such fools' gold. Too many so-called IT strategists have chased this chimera, this mirage, this

That's what I say, after talking to the CIOs who've been lionized for doing it. I recently interviewed Charlie Feld, Max Hopper and Mike Heschel - you can see the results in the Forecast issue. Their great, so-called competitive advantage systems at Prito-Lay, American Air-

Objective: Competitive advantage wasn't on the mind of the CIOs lionized

for it. lines and American Hospital Supply. spectively, made busi

They're proud of their accomplishnts, but don't like the label. Hopper, who built the Saltre airline reservation system, said serzing competitive advantage is "not a worthy objective," and sustained advantage through IT isn't possible. And Heschel snorted, "We didn't say, 'Objective: susinable competitive advantage" " when American Hospital Supply's ASAP ortheir problem with competitive advan tage, when it made them so famous? The problem, they say, is that it puts too much emphasis on technology. It turns IT into a maric bullet. But the world isn't like SAP's insipid old TV commercials, in which software makes your profits soar your boss smile and your staff dance If you don't know how to

dering system was in the works. What's

run a business or understand your customers, you'll end up as another big spender with an abanment problem. Hopper knew that. He sold his Sabre technology to competitors because he knew his eder wasn't technology, but

his knowledge of how to run an airline. Chasing competitive advantage also fosters the illusion you can plan that stuff. It whips up an image of The Best and the Brightest Gathering in a Wood Paneled Boardroom to Come Up with a Grand Strategy. Yeah, it's good work if you can get it - ask any strategic consultant driving a Mercedes — but that's

not how it really happens. The truth is, those legendary CIOs weren't aimine at competitive advantage.

So many IT industry issues simply

Republicans and pro-worker Democrats. But what are the liberal and conservative

positions regarding privacy, copyrights.

They aimed at something more simple and down to earth: offering customers a service that makes their lives easier and richer. Or figuring out which business processes were the most important and seeing how technology could belp. What matters is execution where it counts. Competitive advantage, in fact, is a lot like happiness: You don't find it by

obsessing about it. The philosopher John Stuart Mill got it right: Those only are happy who have their minds fixed on some object other than their own happiness; on the happi ness of others, on the improvement of mankind, even on some art or pursuit

Aiming thus at something else, they find happiness by the way."

If you're hung up on com vantage, wise up. Do something urgently

and uncompromisingly right for your customers or operations, then find some-thing else that hadly needs doing and do it again. Unless you corner the market in, say, operating systems, that's how to get customers to come back so often that it looks like competitive advantage. O

Alter is Computerworld's department edi ter, managing. His Internet address is

IT not a perfect fit for either political party

David Moschella

lthough most of us will not vote, tomorrow is an election day. At least once every two years, it's worth considering where America's main political parties stand on issues of interest to our industry and whether those positions should make us refuse to fit nicely within traditional party lines. The H+B visa issue revealed look favorably upon one group or the other. the traditional split between pro-business

Actually, that's surprisingly difficult Although both Democrats and Republi cans are constantly saying that informa-tion technology will be the major engine of growth in the asst century, t seems to be little else they agree on even within each purty. Even wome, both even within each party, twen worse, our ides are guilty of essagerating their darker messages. Too often, the poten-tially powerful rhetoric of opportunity gives way to the easy politics of fear and/or resentment. Consider the lary

 Although many Democrats support a variety of pro-IT positions, the dominant message is still too often one of resentment. We are being warned consti that technology is contributing to widening societal income gaps, that we're heading toward a world of digital haves and have-note and that IT goes hand-in-hand with globalism - with all its restructuring, offshore manufacturing and other forms of downward wage without Internet access is a national ragedy, almost akin to child ale

them excited is fear. Fear of encryption aiding terrorists and organized crime, fear of pornography and gambling, fear of ad-

pressure and job insecurity. Too often, ocrats imply that leaving a student Republicant also love to talk about the wonderful opportunities created by technology, but what really gets

tronic commerce, and even the intertion of the Intern Computer pros' unusual

Internet "speech,"

commercial codes, digital cash, elec-

stances make them difficult to pander to

wrong hands. The supposedly antigovitself? Although, tronically. Democrats rament party too often acts as if an unbegan the antitrust case against IBM and Republicans ended it, in the Microsoft strained Internet would lead us all into case the best-known DOI boosters -Not surprisingly, many conservatives each as Robert Bork or even Bob Dole have a hard time accepting accelerated have been Republicans, with the White House almost eerily silent.

Perhaps because our ind heavily concentrated on the East and West coasts, a relatively high percentage of the IT-oriented population is fiscally conservative but socially liberal. Because we don't vote in large, predictable blocs, we're difficult to address, let alone pander to.

The Clinton-Gore team tends to understand and articulate that reality much better than Gingrich and Lott, but even they haven't been able to consistently serve our industry. If industry issues alone decided how most IT workers vote, it would be pretty much a toss-up, meaning the voice of our industry will continue

Monchella is an author, independent nsuliant and weekly columnist for conputerworld. His Internet address (Imoschella@earthlink.net.

to be muffled. O



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Briefs Turn friends into cash



· Referral programs have eased labor crunch

WHEN IT COMES to recruiting IT referral programs have proved one of the most inexpensive

and effective methods to find Cash awards that range from \$500 to several thousand dollars are typical for referring an IT professional who stays around for at least a few months. That's a pittance compared with the commissions naid to employment agencies. which typically range from 20% to 25% of the hire's base salary

Jeanie Mabie, recruiting director at the North American practice of consultancy PricewaterhouseCoopers LLC, said about a third of the firm's hires are coming from its employee referral program, up ao% from a few years ago. Mabie said the firm saves \$1,000 to \$0,000

Toys R Us goes cold

turkey to save money

WHEN TOTS & US INC. CIO Tom

Remebach talks about why the spany cut back from nearly

So IT contractors to fewer than to last year, he uses the metaphor of addiction.

Contractors "get into your bloodstream," he said. They are a "quick fix" that provide an inection of skilled workers who

don't count as part of the de-partment payroll. Because they are ostensibly temporary, he

sided, managers feel "I can stop anytime I want."

CIO in 1996, the information

So contractors gave the busi-

ness units the impression it

could do the work of 300 work-

rfore Reinebach became

hnology department and its

By David Orenstein

By Bart Cole-Gomolski

per here through the program. holding, even though the ante talent, it turns out that it is has gone up for companies. In whom you know. addition to hefty cash LABOR In the midst of SHORTAGE prizes, some companology labor drought, employee trips and cars as part of their employee referral programs. For

The savings appear to be example. PricewaterhouseCoop.

a Ford Explores as its top prize this war, and US West Communi cation Corp.'s top prize was a trip for two to Hawais. At Carlson Cos in Minneapolis. employees

Referrals, page 40

competitive pay, flexible com

pensation and creative rewards.

Moreover, CIOs such as Eve-

Retailers struggle

ment just to play the game in today's marketplace." We have extreme pres

she said. 'Creative management - that is the bottom line Follit, who was hired last year as vice president of human cap ital with a mission of making Betallers, page 40

to keep techs By David Orenstein CIOS AT MANY LABGE retailers are finding that they must not

hos Sallis at Sout Worth Towar. only pay full price, but also liven up their corporate culture based Tandy Corp. find themif they are to woo away from richer companies the talented IT workers they need. Even with lower profit m gins than most other busi-

selves changing cultures even as they change compensation - which Follit calls "a require-Too many contractors

> ers with only 220 employees in its budget. Because contractors (and their agencies) are paid payroll of about 950.

more, real labor costs equaled a Meanwhile, Reinebach said, problems mounted. Contractors originally hired for three to six Centractors, page 40 Some market pressures for recruiting and retaining IT staff:

eT employment will grow 106% from 1996 to 2006 eOne in five IT staffers will leave their organization each year through 2002

elt takes an average of 6.2 months to replace each staffer with three or more years of experience

e Contractors are paid 30% to 100% more than regular e62% of IT workers rank pay as the most important job

offer incentive Season Codes Form, Citi of Street Corp., ACM Computing V.S. Department of Labor

Pepsi seeks an edge with fleet-tracking

By Sharon Goudin

paper-coan co. is trying to save millions of dollars by keeping better track of its fleet of 24,000 trucks and vans. The move puts Pepsi on the right track, according to one analyst. but still leaves it behind the Pepsi is wrapping up an 18-month project designed to track pairs and warranties on its trucks and vans in the U.S. The application was desig to track warranties to belp Pepsi collect navbacks for maintenance on vehicles under warranty, according to Gregg Jacobs." vice president of marketing at Prototype Inc. in Novato. Calif., which developed the softalso helps identify parts in the company's inventory that are in excess or that are obsolete. "We didn't have a standard practice for handling fleet main tenance," said Andy Yablin, op

erations support manager at Penci in Somers, N.Y. 'We had people in Alaska who not hings on a piece of paper and ecople in Michigan who had Pops's floot, page 40

Retailers and IT pay

CANTIBUES FROM PAGE 32.

Thindy is information technology culture more competitive, is manipulating several levers to improve Thody's recruitment and retention of key people with hos stells. Currently, 40% of the \$3/4, billion electronics retainer's compensation budget is given out as upon bussels and other forms of variable compensation. Workers also can are flet day.

hins skills. Currently, 40% of the \$2,4 billion electronics retailer's compensation badget is given out as upor bonases and other forms of variable compensation. Weders also can earl fine days, porti sharing and fine tips to amistement centers. And IT baff can dress causally which has prompted employees from other business units to more time. The can deep days are to they can deep days are can deep days. Polit said.

David Foote, managing purt-ner at consultancy Cromwell Foote Partners LLC in Stamford, Conn., said retailers, which traditionally had little tion in business operations such as marketing, buying and inventory management, now face pressure to implement sharp data warehousing, forecasting and other applications to keep up with innovative comnetitors. That has caused IT shops once based almost entirely on old-school hierarchies and pay scales to refocus on crestive ways to compete for workers with hot skills. "You've got to really be way out of the box."

OUT ON THE MARGINS

Follit's challenge, as she scrounges for staffers who can fin the year soon problem, room duct as o enterprise resource planning implementation and ensure the success of a new 5000-time the success of a new 5000-time the success of a new 5000-time that the is competing against AMR Corp. the parent of American Airlines and other Dollas-area employers. Lust year, AMR's profit margin was 5,316.

while Tandy's was 3.5%. Nevertheless, Tandy was obliged to offer the same 4% to 6% increase in pay that other Dallas-area IT workers received. Competition also concerns

Competition also concerns Toys R Us Inc. CIO Tom Remobach. The company is menous and the company is measured to the company is measured to the company in the company in the company in the company is measured to the company in the c

scores of contract programmers, who didn't count as past staff. Now it is custing those contractors and investing more money and caseer development in its full-time employees (see related story, page 39). Seattle-based Starbucks Coffee Co. has straggled to fill IT

pobe as it has grown by nearly a store a day in recent years, said CIO Deborah Gillotti. IT has grown from 30 workers in 1993 to 225 workers now — and the budget calls for 290. Despite Starbucks' hip, up-

scale image, the company found tired in the same boat as older retail operations. "How do you make them want to stay? You have to make it fun, "Gillotti said. Starbucks holds a "celebrate success" program every quarter to recognize what has gone well. Gillotti surveyes workers to find out what perk where you find out what perk they want. (Many said selection-moting.) Starbucks is also

muting.) Startuces is also investing in cross-training to belp workers with out-of-date skills develop new ones.

"They have come a long way, and IT has been right in the middle of it." Foote said. I

Snapsh@t

FIRM	1997 GLOBAL MANAGEMENT CONSULTING	IT DEVENUE	MC TOTAL
Anderson Consulting	(MC) BEVENUE	\$3.358	50%
Ernst & Young	12.618	SLEED	60%
Deloitte Consulting	\$2,306	\$1,158	50%
KPMG Peet Marwick	\$2.018	\$1.158	57%
Coopers & Lybrand*	\$2.408	\$0.968	40%
Price Waterhouse*	\$1.400	\$0.918	65%
Arthur Anderson	\$0.958	\$0.578	60%

* Prize Materianuse and Coopers & Lybrard energed in July Series Reseat Steventon, Filterlain, M.K.

Referrals

continues from PAGE 32 ceive \$2,000 per month after the person they have referred is hired. In addition, they get \$1,000 per year for up to four years if the referred employee stays on the job, said Renee Bianchi, Carthon's human resources manager for IT.

At PECO Energy Co. in Philadelphia, the employee referral program started in IT and is spreading to other divisions, and Bevery Businovski, staffing manager. There is a sense that referred applicants are prescreened: They are being recommended by someone who knows the corporate cul-bure and thinks they will fit in," the said.

their co-workers whale on proj-

ects, and they may consider a

job switch if a highly regarded colleague leaves. "Many JIT pro-

EASY BONDERS
Recruiters said IT lends itself
particularly well to referral programs because IT workers tend
to develop strong bonds with

fessionals] go from company to company in small herds,* said Dave Tyner, director of management and professional staffing at US West in Denver.

at 05 West in Denver.

The telecommunications git ant's referral program, called
Telefriend, was implemented
last February and is already producing 20% of its professionallevel hires.

The program has resulted in 245 hires, 103 in IT. Typer said in the past the company was reluctant in launch a referral program for fear that, with 50,000 employ-

launch a referral program for fear that, with 50,000 employeer, it would be unmanageable. However, it has cut the sdimiistrative burden by putting key information — open positions, rules, referral forms, application forms and recruiting tips — on its corporate intranet. That saves the costs of printing and distributing paper forms.

distributing paper forms.

Even with automation, these programs are a lot of work, recruaiters said. At PricewaterhouseCoopers, "several full-time reprogram, Mabie said. US West has one full-time person managing Telefriend, Typer said. "We

thought we'd have a month or is to tramp up, but we got 500 resumes the first week."
Another possible drawback of employee referral programs is that they tend to reproduce your

current workforce.

"There is a dark side to self-replicating," said Steve Knight, sensor vice president of Integral Training Systems Inc., a consultancy in Half Moon Bay, Calif." it's like dipping in the same gene pool."

Contractors

CRITIUEE.TERM PAGE 18
months stayed for years. Employees working abongside contractions who were making you.
The contraction who were making you.
When contractors left the company, institutional memory and
technology left. Key development was partially outbourced.
Early last year. Tony R U decided to renew just a few contraction. Only about half the contraction offered staff positions secopted, and Tony R U agree

employees raises with the raving. Beineboch declined to say how much the company saved. There have been withdrawal symptoms. Reineboch acknowledged. The company lost several skilled comtributors. The department, with a more straightforward head count. Thad be get into more arguments with one user groups. We had to put user groups. We had to put

more of a state in the ground." he said.
In addition to the raises, Reinebach said, the company is now committed to developing talent from within its ranks. Toys R U said uses a few contractors, but they aren't hired for more than six months, and they now most transfer skills to in-house employers. I

Pepsi's fleet

their own little system... We're reducing fleet expenses, and in any business, that is

The application runs with an Oracle Corp. database on an ISM ES/Good Units but. The Recks, nyshers so dispersion of the Recks, nyshers software was designed to track work being done on the trucks in the 1st distribution units across the U.S. A Microsoft Corp. Windows IXT server will guther the maintenance information and tabulate it in the 1s units. A shapping the information and tabulate it in the 1s units. A shapping the information and tabulate it in the 1s units. A shapping the information and tabulate it in the sa units. A shapping the information and tabulate it in the sa units. A shapping the information and tabulate it in the sa units. Papal's float project reject longth; Pabruary 1998 to December 1998 loftware: PlantAnywhere from Prototype Inc. Horage: Gracio database on an ISM RSA6000

Branch server: Windows 197
Approximate cost: \$500,000
Purpose: Recking maintenance on 24,000 vehicles

mation back to the main database. The project started in February, with the first unit up and running in May. The project is expected to be fully operational in North America by December.

tisThe noftware license cost
the Pepsi more than \$300,000, and
the service contract is worth
is \$200,000, according to Jacobs.
al "Any technology that can be
see, leveraged in the cola ware is s

good investment." said John Danike, an analyst at Work-group Strategic Services Inc. in Pertsmouth, N.H. 'Its it good consupered to what other compared to the Federal Express is tracking shipments, not just tracks. That gets more than the customer service... Pepi should have been doing this two years ago when the technols.

ogy was new."
Yablin said he couldn't put a price tag on the savings, adding, "It's a tough number to quantify, but we knew we could do a lot better than what we were



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UNISYS

Internet Commerce

Extrenets . The World Wide Web . Intrenets

riefs TV may force site tweaks

None	4
1% to 10%	4
11% to 25%	
26% to 50%	
51% to 75%	
76% to 100%	

t popular products to buy online*

SOFTWARE

HAROWARE

EI TRAVEL

 Growth predicted in TV-based Net devices By Sharon Machlin

Data Corp. (IDC) last month predicted that shipments of varглествонис-сомменся design ious TV-based Internet devices ers already must build sites that will soar from 1.4 million units this year to more than 11 milhandle audiences with a wide range of technol DESIGN

Those devices ogy available, bal-ancing the needs **REQUIREMENTS** include not only WebTV, but also items such as cable and satellite set-top boxes that can deliver Internet data along with conventional TV proming. This type of funcenality is going to become a little more pervasive," said

computer monitors vs. televi-Kevin Hause, an analyst at IDC in Mountain View, Calif. IDC is For now, devices such as Microsoft Corp.'s WebTV are a a sister company to Computersmall percentage of the Inter-If and when TV emerges as a

major factor in Web surfing several site designers said son of those surfers may have to forgo aspects that depend on client-side computing, such as Java applets. That's already the case for those who use older

Because of differences in screen size, resolution, color palettes and the like between visions and computers, a Web site's appearance tends to change when viewed on a TV screen — and not always for the better. "It doesn't look as good on WebTV," said Cyndy Ainsmostly disperse of marketing at Virtual Vineyards, the wine and ourmet food site run by Net



Unified message apps accent accessibility

By Matt Hamblen

oev available, bal-

current ones

sion screens.

of a8.8K bit/sec. modems with

Ti lines, for example, and ver-

sion a.o browsers with more

Soon, site designers may face yet another technology split:

net audience. But International

THE VOICE of Webley, a proper English butler, greets users of a new unified messaging service that analysts say is part of a resurgence of products that bring E-mail, fax and voice mail together in a single interface. Actually, Webley isn't a butler

Webley Systems Inc. in Deerfield, Ill., which hired an American actor to record the voice for use in its Webley unified mes-

saging service. When you dial in to an 800 number from a remote location, Webley can play your voice mail following your voice commands or even English. The voice is a or can even let you listen to iners write, run and maintain

scalable, distributed applications that serve up information from

databases to Web browsers -

will be offered immediately as a bundled option with any Sun

server for a 20% savings over

the usual NetDynamics pricing

also said end users can expect

tighter integration of the appli

cation server and the Solaris op-

erating system. GetSmart.com, a Burli

But Alan Baratr, president of Sun's Java Software Division.

ng E-mails or faxes that Webley reads to you using textto-voice software. After you're one listening to your E-mail, you can respond using your own voice, which Webley will deliver in a RealAudio attach-

ents Inc. in Palo Alto. Calif

TV and sites, page 46

"When I got the service, I thought people would be turned off by Webley's voice, but the response I've gotten is that he's

so nest," said John Cohen, pres ident of consultancy PSComm LLC in Gaithersburg, Md., which has been a Webley Systems customer since Max *Some of my customers have even asked to meet Webley."

PSComm provides connul advice to government official who often need quick access to consultants on the road. Cohen Unified message, page 46

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- What wer surrers on come				
Send/road E-mail	REGULARLY 92%	OCCASIONAL 5%		
Use search engines	83%	12%		
Research products/services	58%	34%		
Gether local information	53%	34%		
Visit news alles	49%	37%		
Visit online directories	35%	46%		
Visit online stores	29%	50%		
Download software	35%	43%		
Read magazines/newspapers	31%	41%		
Visit TV/movie sites	25%	45%		
Enter contests/sweepstakes	27%	41%		
Visit music alles	29%	39%		
investigate travel options	24%	43%		
Visit personal Web pages	29%	36%		
Use chet reems	21%	32%		
Same: Survey of 2,500 coding resource	173			

Sun widens abilities of apps server

By Carol Slines

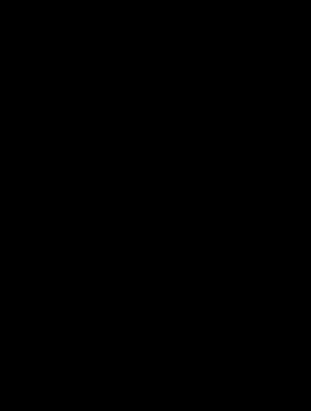
WHEN SUN MICROSYSTEMS INC

late last month announced its plans for the application server it acquired this summer from NetDynamics Inc., the road map came as welcome news for

many of the companies that have been using the product. The NetDynamics application server — which helps develop-

its Unix adm

Calif-based company that takes online loan applications for 118 lenders, hopes that will mean age and tune both its Unix



Internet Commerce

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w much of your negat ng activity is now conducted

None	43%
1% to 10%	43%
11% to 25% .	5%
26% to 50%	3%
51% to 75%	196
76% to 100%	196
Den't know	4%

lata, voice and video Systems Inc. in Sar Calif., and Hewlett d Co. in Palo Alto re begun e joint ef pistrorm sna.

providers offer comdata, voice and video
as over both the public g HP's OpenCall with Cisco's ISO

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ES CLOTHING

map came as welcome news for many of the companies that have been using the product. The NetDynamics application server - which belps develop

By Carol Slava

<u>fiefs</u> TV may force site tweaks Growth predicted in TV-based Net devices

By Sharon Machlis Data Corp. (IDC) last month ELICIBONIC COMMERCE design ers already must build sites that handle audiences with a wide

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screen size, resolution, color palettes and the like between televisions and computers, a Web site's appearance tends to change when viewed on a TV screen - and not always for the better. "It doesn't look as good on WebTV," said Cendy Ainsworth, director of marketing at Virtual Vineyards, the wine and pourmet food site ruo by Net Contents Inc. in Palo Also, Calif.



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Sun ages server, page 46

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consultants on the road. Cohen Unified message, page 46

Snapsh

What Web surfers do online				
Send/read E-mail	REGULARLY 92%	OCCASIONALLY 5%		
Use search engines .	63%	12%		
Research products/services	55%	34%		
Gather local Information	53%	34%		
Visit news sites	49%	37%		
Visit online directories	35%	46%		
Visit online stores	29%	50%		
Download software	35%	43%		
Read magezines/newspapers	31%	41%		
Visit TV/movie eites	25%	45%		
Enter centests/sweepstakes	27%	41%		
Visit music eites -	29%	39%		
investigate travel options	24%	43%		
Visit personal Wab pages	29%	36%		
Use chat rooms	21%	32%		

Base: Survey of 2,500 online consumers



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concept of value. To locate a reseller (and the visit www.compaq.com/products/portables/





Bookseller beefs up products, searches

▶ Barnesandnoble.com update targets Amazon Jupiter Communications Inc. in By Sharon Machlis New York, "I also see this as a

BARNESANDNOBLE.COM ID OCTOber fired another salvo in its closely watched battle with bluechip Web book retailer Amazon.com, unveiling a redesigned Web site with more product offerings and improved search capabilities \$200 million investment from

"I see this as a step forward for Barnesandnoble.com," said Preston Dodd, an analyst at

work in progress." Despite its competitor's site revamp. Amazon.com remains the acknowledged leader in online bookselling. But Barnes andnoble.com is expected to evolve further after the recent German media conglomerate

Bertelsmann AG, Dodd said.

Sertelsmann currently owns

half of Barnesandnoble.com Barnesandnoble.com beefed up its product offerings in coninnetion with several outside partners, including the popular electronic greeting card site Blue Mountain Arts (www. entois com It offers out-of-orint and anti-

quarian books via Advanced Book Exchange Inc., which boasts a network of 1,600 dealers. A key question for the redesign was, How do we package

multiple (offerings) into a sin

cles after seeking books. purchased electronically, through s deal with Northern Lights Technology LLC (www nisearch. The redesign also worked to Palo Alto, Calif. [3]

andnoble.com in New York.

The site has enhanced its

search capabilities, offering an

option to search for related

manazine and newspaper arti

The articles must then be

speed up page loading through more streamlined graphics and "creative uses of HTML" Dodd

That includes more use of gle, cohesive product? said John Kristie, vice president of infor-HTML the Web programs language, in navigation bars instead of pure graphics, which mation technology at Barnes-

take longer to load. Despite the revamp, Barriesandnoble.com 'is consistently less elegant or direct than Amazon.com. Activities that are possible on Amazon.com's site i one or two clicks seem to take three to five clicks on Barnesandnoble.com," said Shelley Taylor, s Web design analyst at Shelley Taylor & Associates in

to look much more like adver-

Doing an online newspaper for

catalog| is not going to cut it," Schmitz said. That means more

pictures, larger type and fewer

SMALL AUDIENCE Only a handful of sites are de-

veloping versions optimized for

TV viewing because the current

Internet TV audience is so

of Web design firm Newmarket Network in Boston, decided not

to design the popular Car Talk

site (for National Public Radio's

launch, when WebTV had sold

dicated auto advice show) for WebTV after the site's 100

Tom Lix. president and CEO

tising on television looks. .

Unified message

CONTINUED FROM PAGE 43

is able to give out one 800 phone number for any client to reach him for sending voice and

fax mess Cohen said he was attracted to Webley at first because it didn't require any expensive equip-ment to be installed on his premises, although several large companies are now selling equipment for customers to set

up the service themselves. Analysts said the Webley voice urves a user-friendly, if quirky, quality to unified messaging, a field that appears to denly be expanding after years of slow growth.

Oracle Corp. and Nortel Corp in the past month have announced unified messaging products with voice-recogn features that they plan to sell to large voice and data carriers, said Kathleen Dester, an analyst at Gartner Group Inc. in San lose Calif Analysts said they expect that

carriers and Internet serviproviders will soon begin offering unified messaging along with Internet access for a fixed monthly fee Consumers and some executives will respond to that fixed price model, Dexter said, though she said she doubt-ed whether Webley's flat monthly fee - which starts at Seo, plus 14.9 cents per minute of use - will attract many

Those calling m on cellular ones must also pay their carper for the ri cents or more per minute of use, which is a furcials are trying to work with cel-

Webiey unified messaging system highlights:

- Speak arry of 2,000 names and a call is automatically dialed
 - · Listen to, reply to or forward E-mail over the phone using voice acti
 - · Forward E-mails to a fax by speaking the contact name or fax number
 - Instantly synchronize a personal contact list from a PaimPliot or Microsoft Outlook via the internet

lular carriers to reduce the total. company officials said. Dester cautioned companies

considering contracting with Webley or another ontside uni fied messaging service that the users of the new system will be "in a separate world" from those users in the same comny who are on an incompate voice-mail system Nortel makes a unified mes-

saging product that works stop its own voice-mail software in its Meridian public branch exchange switches, but such compatibility is uncommon, Dexter

With large hardware makers offering unified messaging products and Webley's perminute pricing, Dexter said Webley stands a big chance of getting lost."O

TV effects on Web sites

CONTINUED FROM PAGE 43 In addition, site strategies should change to attract users who are sitting on a couch across the room, said John Schmitz, vice president of de sign at Interactive Bureau LLC in New York, a major Web de-

sign house. You're generally viewing it in a very different way," he said of TV-based Internet data. Although the computer user may

read small type and scan for information, the TV surfer is more likely to be in an enternment frame of mind ewn when looking at a news or shopping site.

You need to have much faster impressions of what you're seeing. It's going to have

"It's hardly worth worrying sbout" right now, Lix said. "When it gets bigger, we will design for it." Web sites can

200,000 tuode

be redesigned fast enough that he can afford to react to moves in market share and not try to predict them, he said. In Europe, digital TV is

"quickly emerging as a second interactive platform, competing with the Internet for consumer interactivity," according to a study released last week by Jupiter Communications Inc. at its Online Forum in London. Jupiter predicted that by 2006 digital TV interactive services will penetrate 19% of British olds, 18% of French omes and a8% of Swed

Sun widens abilities of apps server CONTINUED FROM PAGE 43

er for optimal performance and er for optimal personner now reliability. The company now has different people tending to

the Unix and NetDynamics Additional Sun plans for the NetDynamics line include the

Continued support for other platforms, including Windows NT, HP-UX and AIX. That might help programmers such as those at Southern California Gas Co., for instance, who do their development work on Windows NT because it's cheap-

er. Then they deploy the applion on Solani Support for Enterprise Java-Beams (E)B) in pest year's first

Component Object Model (COM)

through a NetDynamics Platform Adapter Component. · Licensing Inprise Corp.'s Visi Broker Integrated Transaction Service, an object-oriented

ansaction monitor for distribted systes Though the schedule to sup port EJB puts the NetDynamics server behind EJB-compliant of ferings that have been trickling out this fall from other vendors.

any users said they don't need dute support for EJB and would rather wait for a mon solid offering. NationsBanc Services Inc. in

Chicago, for example, is explor-ing the use of EJB to further rece the amount of code that developers need to write and maintain for online applications used by its decision-makers. But the company is perfectly content to wait for the nascent EJB specification to "mature a bit," said John Melka, NationsBanc's manager of information technology tools Chevron Corp.'s global lubri-

cants division in San Francisco used the NetDynamics tool to build an online application that lets delivery companies get re-imbursed for the Chevron lubricants they sell. In general, Chevron is planning to take an object-oriented approach for ap olication developm ent. But be cause it hasn't settled on a COM- or EIB-based model, Net-Dynamics' support for both helps users.

The more flexibility, the better until we make up our minds," said Jim Conger, manager of information systems at

ITS HIS PIKS I AND STILL TO

Of each a consequent notes of the and

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valiability by automating our repetitive tasks, centralizing job scheduling, securing user and data ccess, and Improving application performance.

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roactively monitor, manage, and analyze your network and internet to identify otential bottlenecks, increase uptime, improve response times, and quickly resolve problems.



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 ${f Briefs}$ 3Com offers support on Web

Workflow system may save Lockheed Martin \$1M

▶ Benefits may ripple throughout company

By Roberta Fasoro

AIRCRAFT MAKER Lockheed Mar tin Corn, has halved formsprocessing times with a workflow system that may save it more than \$1 million by 2001. But its main intention was to reduce the amount of time and

paper being lost during its quality assurance process. Lockheed Martin Tactical

Division in Fort Worth, Texas, last December started to meld ActionWorks workflow technology from Action Technologies Inc. in Alameda, Calif., with its existing imaging and manufacturing re source planning system run-ning on Windows NT. The distance

F-16 fighter jet for the U.S. Air Force and sections of the F-22 and the F-2 fighter planes. There are more than 10,000 employees on site. More than soo employees in the F-22 and F-of units use the Action Works. based system, and officials said the system may be rolled out to

Documentation papers would sometimes get lost as they were passed from station to station for approval, said David Andrews, deputy project manager tems. That held up the billing process and became a major mers, he said.

The quality as surance process — PLANNING in which factory floor inspectors report on product nonconfor mances and production find manual hand-offs of documents

and reports and took 20 to 30 days to complete, officials said. The ActionWorks system has out that cycle time in half. Plus more, and Iwel have greater ac curacy in documents."

AFTER MEABLY 2 year of requests from some of its largest users, 3Com Corp. two weeks ago launched an Internet-based knowledge database service designed to eventually provide answers to problems for all its

product lines tCom Knowledgebase (http:// knowledgebase scom.com) is a database of answers 3Com engineers generated in response to

dressed to the "We've been pushing company's tech-nical support for this type of inforfree Web-based mation on the Net. and service was de-

signed to proit's . . . very useful." vide a quicker and less expen-- Bob Kapier sive alternative

to users who **Lockheed Martin** would otherwis call the vendor's technical support grown After registering for the around the clock service.

user enters a description of the problem. The system matches the problem with similar problems in its database, then presents a list of options to the user. List choices narrow the search and direct the user to the answer

type of information on the Net and it's proved to be very use ful," said Knowledgebase beta

tester Bob Napier, a senior network engineer at Lockheed Martin Corp. in Oak Ridge, Tenn.. and a vice president of sCom's user group. "We were able to find out how to activate ad vanced features on a 3Com switch without having to call technical support. It saved us a

release Knowledgebase cal solutions for hubs, switches LAN and PC modem cards

network inter face cards and remote-access products. formation

PalmPilot and video networking products will be added soon. Cisco Systems Inc. and Bay Networks Inc. offer similar Netbased services, but unlike Com their customers must buy support contracts to use the

Users benefit in two ways. said Richard Brewer, a sensor analyst at International Data 3Com, page 52

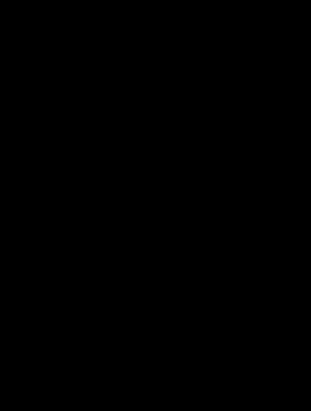
Big boys flex VPN muscles



users warring for more virtual private network (VPN) choices from large vendors got theu wish two weeks ago, when Intel and Cabletron announced prodacts that would compete with offerings from market leader Ciero Systems Inc.

Intel Corp. in Santa Clara, Calif., paid \$185 million for remote access and VPN vendor Shive Corp. in Cambridge Mass., and Cabletron Systems Inc. in Rochester, N.H., an nounced two VPN routers at the Networld/Interop '98 con

And Cisco in San Jose, Calif.



The Enterprise Network

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${f Briefs}$ 3Com offers support on Web

rooM bit/sec. ports. It noM/nooM bit/sec. ports an two Gigsbit Ethernet port It will ship by year's en

third quarter and is on the to achieve its goal of ling 12 million new Notes its this year. The Camsh to con

Wise 5.2 or higher 32 lients, including th Wise 5.5 32-bit c

Has your network security been compromised by all coal introder within the



B Don't know

Workflow system may save Lockheed Martin \$1M

· Benefits may ripple throughout company

By Roberta Fusaro

AIRCRAFT MARKE Lockbord Martin Corp. has halved formsessing times with a workflow system that may save it more than \$1 million by agost. reduce the amount of time and paper being lost during its qual-

ity assurance process. Lockheed Martin Tectical RESOURCE Corp.'s Aircraft Systems

Division in Fort Worth, Texas, last December started to meld ActionWorks workflow technology from Action Technologies Inc. in Alameda, Calif., with its existing imaging and manufacturing resource planning system run-

ning on Windows NT. The division produces the F-16 fighter jet for the U.S. Au Force and sections of the F-22 and the F-2 fighter planes. There are more than 10,000 300 employees in the F-22 and F-16 units use the Action Worksbased system, and officials said the system may be rolled out to

Documentation papers would sometimes get lost as they were assed from station to station for approval, said David An drews, deputy project manager for the quality assurance systems. That held up the billing process and became a major usue for customers, he said.

The quality as surance process -PLANNING in which factory floor inspectors report on product nonconformances and production findrngs - often involved 50 sual hand-offs of documents and reports and took an to so days to complete, officials said The ActionWorks system has

cut that cycle time in half. Plus. "we don't lose documents, any more, and (we) have greater accursey in documents," said Marshall Stewart, chief of infor-Leckheed, page 52

By Bob Wallace

APTER NEARLY & year of requests from some of its largest users, gCom Corp. two weeks ago launched an Internet-based knowledge database service designed to eventually provide answers to problems for all its product lines

3Com Knowledgebase (http:// knowledgebase (com.com) is a database of answers 3Com engineers generated in response to lot of time.

dressed to the "We've been pushing company's technical support for this type of inforservices free Web-based mation on the Net. and service was designed to provide a quicker sive alternative

it's ... very useful." - Bob Napier Lockheed Martin to users who would otherwise

call the vendor's technical support group After registering for the around-the-clock service. a user enters a description of the problem. The system matches the problem with similar prob huy support contracts to use the

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"We've been pushing for this type of information on the Net

and it's proved to be very use ful." said Knowledgebase beta tester Bob Napser, a sensor network engineer at Lockheed Martin Corp. in Oak Ridge, Tenn., and a vice president of 3Com's user group. We were able to find out how to activate advanced features on a 3Com switch without having to call

technical support. It saved us a release Knowledgebase contains technical solutions for

hubs switches LAN and PC modem cards network inter face cards and remote-access needucts

formation PalmPilot and sideo networking products will be added soon Cisco Systems Inc. and Bay Networks Inc. offer similar Netbased services, but unlike (Com. their customers must

Users benefit in two ways, said Richard Brown, a sensor analyst at International Data 3Com, page 52

Big boys flex VPN muscles

VPNs SHOW PROMISE By Bob Wallace



Calif., paid \$185 million for re mote access and VPN vendor Shiva Corp. in Cambridge. Mass., and Cabletron Systems Inc. in Rochester, N.H., an nounced two VPN routers at the Networld/Interop '98 con-

And Cisco in San lose Calif. last week confirmed plans to

VPM, page 52



Firms save by talking over IP nets

IN THE PAST year, small and midsize companies have begun buying products to send voice traffic over the Internet Protocol (IP) to save dollars, analysts say ough big corporate users are still in the testing phase

Two weeks ago, Lucent Techpologies Inc. in Murray Hill. N.L. moved the technology forward by announcing IP ExchangeComm. a software-based system that combines voice. date and fax communications over a single IP network. Pricing was not announced for the technology, which is slated for

Challenge Dairy Products Inc. in Dublin, Calif., one of

four companies testing the techogy, will link 175 employees in nine branch locations throughout California by voice and fax over 1P, said Eric Grosshans. Challenge's network

> BOP IN COSTS Starting in

December, Grosshaps said, he expects the monthly costs of voice and fax hetween branches to fall by more than half, from \$1,000 to perhaps

demonstrations have shown that the voice quality is good. depending on the phone used. Sometimes you

have to be a hair patient waiting for a response, but it doesn't cause any anger or frustrahe said We're not going to be using it to talk to customers.

sust employees Even the largest companies indicate in surveys that they hope to put some of their voice traffic over IP in two years to

save costs over long-distance land-line calling, analysts said Instead of paying for long-distance service, companies would pay only for Internet access at rates that are a fraction of long distance costs, analysts said. Siemens AG, Nortel Inc. and Cisco Systems Inc. and dozens

of smaller ven dors are looking to the marke for voice-over-IP products within rge companies. about \$50 million pected to exceed \$1 billion by

2002, said Hilary Mine, an anahot at Probe Research Inc. in Cedar Knolls, N.I.C.

Bia boys flex **VPN** muscles CONTINUED FROM PAGE SI

lengthen its VPN product line with a new router platform that adds VPN capabilities. But the company provided no

details "(Until now) the leading play ers in the VPN market had been smaller companies with limited resources. . . . The latest entries can [devote] more to product development and innovation," said Eric Zines, VPN analyst at TeleChoice Inc., a incy in Boston. And the entry of bigger players also helps validate the VPN industry

for were he added These moves are a sign of 3Com offers support on Web continuing industry maturity and acceptance, which makes us feel more comfortable about VPNs," said Troy Kent. a lead engineer at Entergy Services Inc., a Gretna, La., utility

Kent is considering imple menting a VPN to sup remote workers. He would like to see equipment vendors team with service providers to offer end-to-end managed VPN offer-ings that include equipment

VPNs are a collection of secure be able to stay connected to links over an IP-based network such as the Internet. As such they're less expensive than traditional private company net works that use dedicated data

Today.. many users continue to voice concerns about security and performance of the Internet as the VPNs' conduit. But that slowed equipment

> Cabletron weighed in with the SmartSwitch Router sto and 520. Both support IPSec and the Layer a Tunneling Protocal. They're due next month at \$2,450 and \$2,250, respec-

Buying Shiva will give Intel a broad line of VPN products called the LanRover VPN Gateways. Shiva will operate as a wholly owned subsidiary and become part of Intel's Network

Shive also has extended its product line with the introduction of the Lankover VPN Gate-way Express, a VPN offering for branch offices and small to

It can support 50 six ous tunnels. It will ship by year's end with 50 client beenses costing \$2,995.

Lockheed

mation resources management

With the new system, inspe tors' reports and proposed reso-lutions are entered electronically and routed to a material review board for disposition. For production problems, an order for replacement parts is automati cally sent to the material review n. Approved parts are devered to the factory floor, and

Pactory workers can now make process changes on the fly, which speeds time to H E W

Corp., a sister company to locating drivers.

The workflow system keeps

*Likewise, with the design of the database, we can add more views and capture more info mation more easily. Both tasks previously were pretty costly,"

Connse Moore, a vice pres dent at Giga Information Group, a research firm in Norwell. Mass., said ActionWorks strength is that It approaches workflow from a knowledge worker's perspective, anticipat-ing that conversation and negotiation happen before a task in a workflow process can take Computerworld in Framingham. "Users don't have to wait on

or sit by the phone for technical support," Brewer said. "Also, ¿Com can [reassign] its very expensive and hard-to-find telephone support people to solving more complex problems." "We'll check it out before we

make calls to technical supe because it sounds like the information it contains would certainly be beneficial to us," said Alan Robson, director of network systems at coupon giant Cox Target Media Inc. in Largo, "We'd use Knowledgebase for

a problem resolution such as erratic behavior from a LAN switch," Robson said. Knowledgebase also has tech nical time on functions, such as resetting switch passwords, configuring adapter cards to support Windows 95 and

There's room for improv nent with Knowledgebase, said Napier, who suggested 3Con

include a list of known bugs for which fixes aren't yet available. sCom plans to make that avail. able by year's end, a spokes-

And it would also be nice to

Knowledgebase and download software from there, rather than having to go to another site to get software updates for switches and other fixes that users must do now, said another beta tester. Kim Bary luk, network manager at the University of Saskatchewan in

yCom has already created links for some products and aims to do so for every product. according to the company spokerwoman.O

Novell, Lucent to offer policy-based switching

 System will accommodate users' needs By Sharen Gaudin

NOVELL INC. is teaming up with Lucent Technologies Inc. to produce technology that gives people access to corporate networks based on who they are instead of what terminal they're using. Lucent plans to bundle Nov

ell Directory Services (NDS), a cross-platform, file-based direc-tory, with its Cajum Switch. The bination was designed to add the ability to create policies

for how different types of end users can use the network.

The switch could use the directory to identify an engineer working on a major project and deliver more bandwidth than would be available to an admin istrator in human resources.

When you define a user's profile, you can define . . . that user's priority over other users, as well as his use of some appli-

cations over others," said Robert Marschall, Internet services

marketing director at AT&T Corp. in Bridgewater, N.J. "More bandwidth is an eco nomic choice." Marachall said. AT&T uses NDS for its virtual private network and plans on using the policy-based switch-

ing, according to Marschall. Microsoft Corp. and Citri Systems Inc. have said they will work on a policy-based switching project, but they haven't nunced a schedule for the

CONTINUED FROM PAGE SI for the quality assurance pre-

the case is closed by the quality inspector

RODUC METIQ CORP. has announced AppManager 3.0, software that centrally monitors the perfor mance and availability of distributed Windows NT

According to the Santa Clara, Calif., compa the new version of the software includes 150 prepackaged reports, ex-tends hardware metric monitoring and adds support for server applica-Corp.'a Terminal Server. Pricing for the software

starts at \$600 for managed systems and \$2,000









THE IBM NETFINITY 7000 SERIES, HIGH PERFORMANCE SERVERS FOR WINDOWS NT.

e-business means a lot of things. It means moving business to the Web. It means improving relationships with customers, suppliers and employees—boosting communication and efficiency both inside and outside an organization. It means looking at data in new and meaningful ways.

it means looking at deal in new and meaningful ways.

e-business also means looking at PC networks in new and significant ways. And it's
probably not much of a surprise to hear that Windows NT* has become one of the

probably not much of a surprise to near that windows N1* rise decorns one of most popular new operating systems in the corporate world.

What you may not know is that HBM is building kneft-based servers with the power to not the major business applications — from companies like SAP Blazm, JD Edwards, Oracle and GAD — used in this largest of corporate networks. Oracle and GAD — used in this largest of corporate networks.

Suit it self power and relability above that disanguan herrinity server now them would-feeper. It is that they come loaded with things like light Metrinity librarigement boils — a comprehensive set of standards-based software boils that make it easier to missing and run your network. And that when you add solvanies a business tools like Web Server Accelerator (it's team on the Net), you can optimize performance by up to 60% when a Netlinity 7000 M10 server is used to serve up the Web! It's that we work with industry teaders like Intel to bring new, more powerful technology to market — in servers designed to use it to its fullest.

technicipy to intritate—in servers designed to use it to us assess.

The Netfinity 7000 M/to server, for example, is powered by the new intel Penfium*II Xeon** processor 400 MHz, providing it with some of the highest performance benchmarks in its cless. (Vinit www.pc.lbm.com/us/lechlinklin/perf for details.)

Nations, palse and simple, tho exposes helicity an even to an of eyes. Still he been braiding mission to leave the simple persons sowth or decision where the some copies and of the extent years now were applied parts appeared to whork years and an extent of persons and helpful profit comprehensives. An extent of persons are helpful price and persons are helpful price and helpful price an

Netfinity servers from IBM aren't just tools for big business, they're tools for big a-business.

Up to 4-way Intel Pentium II Xean processors (400 MHz) / Up to 6GB ECC interferend memory / Prices starting at #11,968*

@e-business tools



THE IBM NETFINITY 5500 SERIES, WITH INTEL PENTIUM II XEON PROCESSORS.

The real explosion of Windows NT servers has been at the departmental level starting with desitop computers and then connecting those desidops into larger networks, enterprise servers and legacy systems.

The growth of intranets, Web commerce and sophisticated custom apps built with powerful cross-platform software like Lotus" Domino" has fueled the demand

for powerful, reliable servers that connect thousands of PC users inside an organization -- from sales reps in the field armed with ThinkPade, to desktop users in customer service departments. Servers like the Netfinity 5500 Series.

As these people connected via Windows NT servers also need access to the detailed information that resides on the more powerful systems that are the nents of a major enterprise (like, say, an IBM PS/6000 SP UNIX*

FACT

server capable of processing millions of transactions a second). In such a world, the ability to quickly and seamlessly integrate departmental Windows NT servers into your larger IT intrastructure is critical.

Netfinity servers, like the new Netfinity 5500 M10, help simplify this integral Take, for example, IBM Nettinity Manager software. It ships with every IBM Nettinity server. It's platform agnostic. It lets you manage cleents and servers from dozens of leading manufacturers. It also helps you be your Windows NT network into enterprisewide management software such as Twoli* Enterprise," Microsoft* SMS* and Intel LANDask."

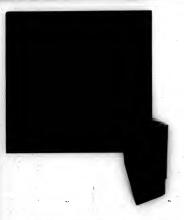
This is what e-business is all about — not just building powerful servers for departmental use (and make no mistake, the Netfinity 5500 Mt0 can handle everything from huge e-mail networks to 24/7 Web commerce), but also providing tools to integrate and manage those servers as part of a much larger network. This helps you control costs and keep your network up and running.

This is the difference between a plain-Jane server and an e-business tool.

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THE IBM NETFINITY 3000 SERIES, AFFORDABLE SERVERS FOR WINDOWS NT.

But what if you're not a large business yet — or zven a medium-sized busines? What if the sales department doubles as the marketing department? What it corporate HOL is you deet? And your bedoon back at home seems more the 24-hour branch office then a place to sleep?

Well, IBM is making servers for growing businesses with all their growth still to come. That means prices you can alfold right now on a server that runs Windows. Not: the basic Netfinity 3000 servicr (complete with an Intel Pentum II processor, speeding stong at 300 MHz), for example, sters as just \$2,365.

That's a very allordable server — but not a stripped one. Like all Netfinity tervers, the Netfinity 3000 comes standard with Lotus' Domino" or Lotus Domino infranet Starter Pack," not to mention Netfinity Manager software.

This makes it easy and inexpensive to put your business on the Web, allowing millions of customers around the world to reach you. So you can grow from a very small business (say, for example, one pet store) to a very large one (say, the world leader in designer dog chow sales). As your business grows, you'll appreciate the virtues of the systems management software that makes it vasity easier to keep your network up, running and generating more business. Nothing wrong with that

Of course, the value, quality and reliability of the Nethinity 3000 server is such that a whole bunch of not-ou-small burnesses will choose them by the dozens for the properties of the properties of the most glamorous tasks, but the day-in-), day-out, got-to-bo-depondable side of e-business.

If you'd like to know more about the full range of IBM Netfinity servers, financing arrangements and server options — from supplemental storage to fidenoptic connections — boolemark www.lbm.com/hetfinity.

You'll find we have the kind of e-business solutions you're looking for.

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WHO BUYS ERPT



Western Europe m Auta/Pacific

se: Survey of leading ERP

MORE WAREHOUSES

age spending on data house projects by U.S.

1998 SI 6M

iefs Database helps put out fires at Disney

▶ Embedded functions make app easier to use loe users need to input lots of By Stewart Deck

LET'S SET THE SCENE: The QUI line rings in the emergency dispatch center near Walt Disney World's Epcot Center in Orlan-do, Fla. Smoke has been spotted ing from Mr. Toad's Wild Ride. The dispatcher enters the caller's information onto a computer screen and determines should check it

database application kicks in to help the dispatcher figure out where the emergency is and

whom to send Embedded databases often turn up in specialty applica-tions which automatically manage complex queries and data

actures to keep end users from having to do it. Embedded databases are parthe government authority that ticularly useful when regular-

it's in place called FirePrograms from Ar-rakis Publishing in Inglis, Fla. — takes the data the dispatcher entered and transfers it to the embedded database, from Pervasive Software Inc., on which it

DATABASES data and the location of the caller, the software which trucks from the area's

data into a database but don't

That particular application -

need to tweak the database once

three firehouses should re-Tracking 21,000 alarms and 10,000 fire inspections per year requires a database that can handle plenty of detail, said Craig Loftin, manager of inforon services at the Reedy Creek Improvement District,

of Reedy Creek fire trucks, such as this one at Escat C

wersees Disney World (see story, page 61).

"We were trying to keep track of it all using an old FoxPro database," Loftin recalled. "We finally decided we needed a altiuser system with record ocking that could run on a [wide-area network] between our three stations without bogng the network down." rolyn DiCenzo, an analys

at the Dataquest division of Gartner Group Inc., said Perya-sive's embedded database is a

PRICING SCHEMES

ERP vendors trim prices to broaden

market reach

By Croig Stelman saver usuas should be able to get good deals on SAP R/s and other corporate applications, thanks to the oldest vendor trick in the book: using price as a

competitive weaps Companies such as SAP AG and Baan Co. are putting toether new pricing schemes as ey try to broaden their reach to more vertical industries and application areas. And users, analysts and even some worden said list-price discour are getting steeper - potential by as high as 70%.

That can pay dividends for new users and for current customers who are evaluating add-on data warehousing, busi-ness planning and front-office rations being developed by SAP and its rivals

For example, Annoco Corp. hich has about 15,000 SAP R/3 users, just bought the Gerformation Warehouse software for future use in analyzing cor-porate data such as sales and

The price was right for the \$36 billion oil and gas produc-er, which also eyed third-party

Scheduler helps steelmaker stand out

> Bethlehem aims to be service leader in a commodity market

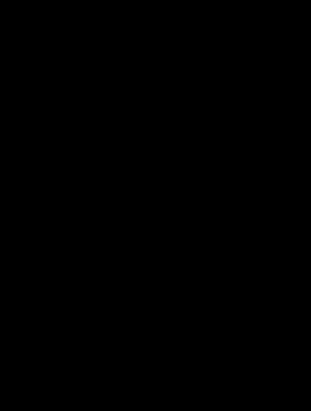
Br laikumer Viiavan

rr's persecuty to be different in a sector where the products you make seldom change, the equipment you manufacture them with is horrendously expensive to replace and the pris ing for your products is set by That's why the \$5 bill

Bethlehem Steel Corp., the second largest steel manufacturer in the U.S., is doing everything it can to stand out in service During the next 12 month the company plans to imple-ment a new capacity planning

and factorywide scheduling sys Sparrows Point manufacturing division in Maryland move clos er to a just-in-time opera





Software

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Western Furnne

a Asia/Pacific Sasa: Survey of leading ERP

Financial ERP

are ma Irvine, Calif.-based Pla m next week plans to re-

rs 7.0 starts at about

solomon IV for Baci

MORE WAREHOUSES Average spending on data house projects by U.S.

1998 \$1.6M \$2.33M

Source Corpe Internation Corp. Artificia, Nats.

iefs Database helps put out fires at Disney

· Embedded functions make app easier to use

LET'S SET THE SCIENT: The OIL line rings in the emergency dispatch center near Walt Disney World's Epoot Center in Orlando. Fla. Smoke has been spotted coming from Mr. Toad's Wild Ride. The dispatcher enters the caller's information onto a com-

nuter screen and determines firefighters should check it DATABASES That's when an embedded ,tion of the caller, the software

database application kicks in to help the dispatcher figure out where the emergency is and whom to cond Embedded databases often

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Outabase, page 68

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By Cruig Stedman

SAVY USTRE should be able to net good deals on SAP R/s and other corporate applications thanks to the oldest vendor trick in the book using price as a commetitive weapon

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The price was right for the \$16 billion oil and gas producer, which also eved third-parts data warehousing products.

Scheduler helps steelmaker stand out

▶ Rethlehem aims to be service leader in a commodity market

By Jaskumar Vijayan IT'S OIFFICULT to be different in

a sector where the products you make seldom change, the equipment you manufacture them with it horrendously expensive to replace and the pracing for your products is set by the industry

That's why the \$5 billion Bethlehem Steel Corp., the second-largest steel manufactures in the U.S., is doing everything it can to stand out in service. During the next 12 months. the company plans to amplement a new capacity planning and factorywide scheduling sys-

tem that will let its steelmaking Sparrows Point manufacturing division in Maryland roove closer to a just in-time operation.



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SAP also recently promis

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[CW. Sept. 21].

Customers, D

Inc. in Newtown Square, Pa.

But McKay said claims that

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Some R/s buyers are paying

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Database helps Disney

pricing scheme, he said.

DOLLAR SIGN

ERP vendors make price cuts

ager of SAP implementation at Chicago-based Amoco. "They made sure they were competitive." Grossman declined to disclose the discount

Amoco received. Retirement planning firm nAmerica Inc. late last year settled on R/s partly because of

How does price rate as a factor when you One of the most important

Importent, but less so than

⇒ Not very Important

Not considered

water Stewarts Its., Carefridge, Marri

piect manager at the Los Angeles based company. But SAP came in best on price and support," he said.

Software pricing isn't always make-or-break factor in purchases of R/s and other ent prise resource planning (ERP) applications, analysts said. Busiess fit often is paramount, and usulting fees and other imtion costs can be three

to to times more than the upont license fees (see chart). But pricing pressures are starting to hit vendors where it

erts. For example, PeopleSoft, in Pleasanton, Calif., last mou warned that its revenue growth will likely moderate, partly because of more aggressive discounting by rivals.

There's no question that

we're putting competitive pressure on other vendors when we go into vertical industries where we weren't before," said Kevin McKay, CEO of SAP, America

And Tracy Corbo, an analyst at Cahmers In-Stat Group in Boston, said embedded databases let users "focus on their business needs and purchase an ap-plication . . . rather than trying The system uses capacity data, matertills-work-in-progress data and order information from

to build [the whole thing] from the various production units at the stround up. Sparrows Point to plan and schedule production of the 1 million tons of steel that Beth-Last winter, the Reedy Creek Improvement District began to lehem annually puts out for the

together themselves

implement the new \$46,000 em and had it running in sing Windows NT 4.0. The new system's report

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econol distrib

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The program eventually will tie into the department's map ping program and a Global Pomine System to let dispatch-

ers see exactly where trucks are along the route to the scene, Loftin said. I

the deal it was able to get from *For SAP, it was aggressive pricing," said Steven Grossman, SAP, which is trying to expand sanufacturing markets such as financial services. Applications from PeopleSoft

Inc. and Clarus Corp. also were in the running, and SunAmeri ca's selection committee was deadlocked on which way to go caid Roy Nakabara, vice pro

dent of cash services and R/3 DOES COST COUNT?

Steelmaker boosts service

CONTINUED FROM PAGE 57

The latest move is part of a wider effort to cut inventories and streamline manufacts processes, which stretches back ore than five years, said Do-inic Toricilo, superintendent of production planning and

fuling at Sparrows Point. Traditionally, the steel indusrry has not been a very reliable jon-time| supplier of products," Toriello said. "Io the past, the philosophy was taking on as nany) orders as you could and ng them after you got

One result was overbooking and a tendency to carry loads of extra - and very costly - in-

ventory. Toriello added. The global scheduling system Bethlehem is implementing will let planners schedule jobs better and execute orders on time, he

Such efforts could start to por off for Bethlehem at a time when players in the U.S. steel industry say they're facing growing competition fro cheap imports from Japan, Rus-sia and Brazil.

TORS TO MANAGE
The global scheduler is based on a decision-support system called Rhythm from Is Technologies Inc. in Irving, Texas.

NEW PRODUCT

VINCA CORP. has an OffSite Archive for NetWare, are that lets users send copies of backup data to ree servers over low-cost wide-area network lines.

According to the Orem Utah, company, the software performs an initial synchrotion between an on-site ly transmitted over To or ohone lines to maintain the to the event of a primary server failure or disaster, the ote server can be moved back in-house or to a networked hot site for operation resumption. Offsite Archive

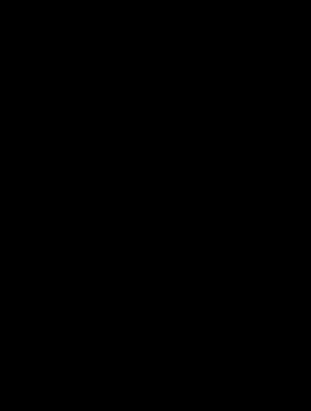
for NetWare costs \$2,000.

onstruction industry and trans-The amount of time it takes to process an order depends on the work involved. Work with narrow, light products, for instance, takes longer to process than heavy, wide workloads. Previously, planners sched uled work based on historical data on the tonnage of steel rticular period, a method that

didn't account for variances in The Ia system will work by first analyzing information at the finished product stage and figuring out how the finishing mill needs to be optimized. It then moves a step back ward in the production process

and schedules the previous cturing unit to optimally feed the final stage. The process is repeated all the way th the production chain.

An average engagement at an integrated steel manufacturer can run from \$2 million to ore than \$20 million, said David Fischer, a vice presiat Ia in Dallas. But "each day of educed inventory is huge [in]



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DOES COST COUNT? How does price rate as a factor when you

evaluate packaged applications?

 One of the most important factors

Important, but less so than functionality

Sugar Paravier Research Inc., Committee Water

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DOLLAR SIGHS

Irm Shepherd, an analyst at AMR Research Inc. in Boston. said ERP vendors always have been but discounters. But price breaks are up about 10 percentage points across the board this

year, he said 'Regardless of what SAP says, they will discount to establish themselves in new industries." Shreherd said SAP also recently promised to come up with a new way of pricing Business Information Warehouse and other new applecations that reach beyond R/t's back-office user domain

[CW. Sept. 21]. And Baan last month an nounced orw software package me and monthly procure starting at \$99 per user in an attempt to make its applications more attractive to midsize customers (1)

Database helps Disney

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INSTALLATION

Last winter, the Reeds Creek million tons of steel that Bethlehem annually puts out for the Improvement District began to implement the new \$46,000 system and had it run June. It operates on a Dell Computer Corp. PowerEdge Server running Windows NT 4.0. The new system's reporting capabilities fet the department

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A dream of utopia

ng the early 1960s, Walt Disney bought up so much p in Orange and Occor on counties that the state of Florida ha ate a governing body to oversee public services, in the collection, flood control, civil engineering planning. So in soft, the R res, 38.6 square miles), plus 430 acres o ed acres and 2,118 acres owned by the

ng its work slightly easier is a set of so as coupled to a network of smoke and h ghout the Dieney complex. "These n building codes have kept our structu n than \$100,000 in the last seven y

By of our size in the world," said Craig Loftin, m on services for the Reedy Oreak district. But aprinklers were little help two weeks ago when a fire br ut in Dieney's remote landfill area, miles away from the p m't even hydrants cut there," Leftin said. "We had to g pumper trucks filled with water cut there, and the

wars once has announced ly transmitted over Ti or OffSite Archive for NetWare phone lines to maintain the

software that lets users send copies of backup data to re-In the event of a primary mote servers over low-cost server failure or disaster, the remote server can be moved wide area network lines. According to the Orem back in-house or to a net

Utah, company, the software performs an initial synchronization between an on-site NetWare server and a remote NetWare server. Subsequent data changes are continuous

worked hot site for operation resumption. Offsite Archive for NetWare costs \$1,000.

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Briefs Publishing: Mac nation

· Output, support concern NT watchers

By Galen Gruman

ALTHOUGH MANY publishers are loring the use of Windows NT workstations to do layout and prepress work, most in this enal bastion of Mac users

have found they must still rely on the Macintosh. TrendWatch, a Harrisville, R.I., research firm, found that

12% of commercial printers. 28% of service bureaus and 22% of separators plan to buy NT systems. But TrendWatch analyst Jim Whittington noted that most companies plan to

buy just a few NT systems, vs. many Macintoshes. ber of NT users in

software vendors in that market - Osark Inc. in Denver

and Adobe Systems Inc. in San Jose, Calif. - don't bother

spokesmen at both companies. panies have However, both cor Windows 95 and NT versions of some rendering tasks and act as their products, anticipating a file server, analysts said

WHERE MACS MAKE SENSE Average TCO* \$14,943 TCO* per program

some migration from Macin-tosh to Windows as well as new Windows-based customers. such as corporate creative-services departments, that don't need the highest-quality output. But NT's presence will screase in publishing because

increase in publ "IT departments [are] driving the push to add Win "We need to be able to troubleshoot and ees," said Kate Balch, manager of

fix our problems." technology services at the Print-- Brad Mintz. ing Industry As-McCann-Erickson Alexandria, Va.

NT is making inroads as a counting them, according to, special-purpose device, mainly to run some image transformations in Adobe's Photoshop, do

For example, Bantam Doub day Dell Publishing Gro Inc.'s Doubleday trade-book division in Garden City, N.Y., uses NT workstations from

4 59

Intergraph Corp. in Huntsville, Ala. — a company that has tar-ected Macintosh-based customers - to run three-dimensional rendering applications that are too slow on the Macintosh. It also uses NT as the server platform. But "forcing (the use of) NT

is not a good choice," said Ed Manel, assistant director of prepress at Dou-"If IT people are having problems running prepress on the

Mac, just try it on NT," he said. It won't be until NT 5.5, per-Publishing page 64

CHIP TECHNOLOGY

Intel looks beyond **Pentium**

By April Jacobs

THE 32-BIT Xeon processor is just beginning to break in to the corporate mainstream, and the 64-bit Merced is two years away But Intel Corp. is already de chins, which were designed

for high-end workstations and Intel plans to deliver Xeon's a-bit successor, code-named Forter, in 2000. Merced's 64-bit cessor. McKinley, is due in

Intel officials said the chips will have at least twice the performance of their predecessors, especially in number-crunching sign and graphics. Intel offered the road map to give end users who look to the latest and greatest processors a head start in planning to use the technology

The jump in performance that the 64-bit McKinley pro vides may help Intel and PC server makers use Windows NT to carve more market share from the Unix market, analysts

And although the new chips are far off, some users already are

environment in the credit-card business, and we're going to need the best CPU resources we can get to support our appli-cations," said Dave Geiver, in formation technology manager

PUTURE HEEDS

anticipating the need to have computers based on them. We have a very big database

at First Premier Bank in Stoup Dalla C D

Intel, page 65

Intel's processor plans include: West Architects

storage-gree networks (SAN): By Nancy Dillon Improved availability: Data is stored from servers and is available via after

Net managers aim to rein in storage

Key benefits of Fibre Channel nate paths, even when servers go dow Improved performance: Throughput isn't limited to server perform

unlike server-attached storage Easier centralized management: Con solidating server-tied data into share SAN enclosures reduces managemen time and costs by reducing the numi of data stores to be managed

Practical data transfer, vaulting and ex-change with remote sites: Connections can span 10km, making inexpensive dis-aster protection (remote clusters and

storage-area networks manageable RICHARD RENISER recently worked eight connecutive 100-hour weeks to help implement a Fibre Channel storage-area network (SAN) at his Santa Monica, Calif-based video post-production house.

He has since managed to pure his workday to a nodest 12 hours. But to get out the door before rush hour, not after, Breniser said he needs SAN

Products on the way to make

management software similar to a mininetwork Hewlett-Packard Co. in Palo Alto, Calif., announced plans last week for such a product:

HP OpenView SAN Manager.
*Right now, I can control read and write on my SAN, but I don't have any strong monitoring tools," said Breniser, the technical director at FilmCore "My ultimate goal is to integrate all aspects of network management in one place,

Publishing: Mac nation

CONTINUED FROM PAGE 63

Macintosh's capabilities, said Michael Moon, an analyst at Gistics Inc., a research firm in San Anselmo, Calif. He said NT's main flaws are the following: NT-generated PostScript output files Windows font handling (especially for

aps in 2003, that NT may match the have seven times more errors than Macintosh-generated files, Gistics' studies Color matching on NT isn't as reliable as on the Macintosh

TrueType) invites output errors There is no NT version of AppleScript. a widely used Macintosh tool to auto-

mate tasks. ·Most plug-ins to QuarkXPress, the industry-standard publishing software. have no NT version. Plug-ins add functions such as special effects and press

Most service bureaus are Macintosbhased and don't know how to properly

handle Windows based files But NT to will address some of the

font, output and color-matching issues, a Microsoft spokesman said. McCann-Erickson Worldwide Inc., a New York advertising agency, was also

very concerned about support. "We're a 24-hour operation, and we need to be able to troubleshoot and fix our problems and not wait for someone to come down from IT," said Brad Mintz. manager of graphics services for the firm's Creative Studio group. He said Mac users are able to take care of them-

NT already meets some users' needs. For example, Printing Corp. of America in Timonium, Md., is impressed with its Intergraph NT workstations, said information systems manager Bill Downey The company specializes in fast production of low-volume color publications. which are usually simpler than those done by traditional Macintosh-based

Downey said he's enthusiastic about the potential of the new Xeon Pentium Il processor and forthcoming 64-bit Merced IA-64 architecture. "The speed is going to be phenomenal," he said. But Moon said the PowerPC AltiVec proces-sor, due next year, will increase Macintook speed as much as 16-fold.(1)

NEW RODUCT INTERGRAPH CORP. has announced

the TDZ 2000, 2 Windows NThased workstation for digital video According to the Huntsville,

Ala., company, the workstation is optimized to handle nonlinear editing, capture, compositing and special effects. An entry-level system includes a 131-MHz Pentium Il processor from Intel Corp., 128M bytes of memory, a 4.3G byte UltraWide SCSI disk and estated 10/100 Base T petwork ing. Pricing-starts at \$2,900.

(256) 730-200

IDOT.COM INC. has announced the sooK6-a, a PC with a 300-MHz K6-2 chip from Advanced Micro Devices Inc.

According to the Austin, Texas company, the system has 32M bytes of synchronous dynamic RAM, a 43G-byte hard drive, a 4M-byte graphics card and a 3a-speed CD-ROM. It's bundled with Windows 98 and includes four Peripheral Component Interconnect slots, one Industry Standard Architecture slot, two serial ports and two Universal Serial Bus ports.

The system costs \$699. IDOT. com (512) 684-90



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Intel looks beyond the Pentium

CONTINUED FROM PAGE 63.

Geiver said the company is in the ocess of moving to a Microsoft Corp. SQL Server database from a Microsoft ForPro-based system

The new SOL database will increase the bank's processing requirements, as

will a business plan that includes nearly doubling First Premier's employee head count, he said.

The business case at First Premier is clear: Faster performance means an increase in production from employees, as

they process thousands of applications and accounts. 'As soon as the 64-bit systems are certified. I definitely see us wanting them," Geiver said.

But, for the lower-end end user, the technology probably is nine months to one year behind the chip release dates, ording to John Dunkle, an analyst at Workgroup Strategic Services Inc. in Portsmouth, N.H. That's because, as usual, companies

are likely to spend the extra money on high-end users to give them the best logy to set their jobs done but will hold off for users where it su't

Intel isn't talking pricing yet, but analysts familiar with the company said these new chips will likely debut in svstems that start at about \$1,000 for the typical workstation/PC and move upward in the server market. I

Net managers

CONTINUED FROM PAGE 43 including 10/100 Base-T and Fibre Channel. ... I want to get up each day at 8:30

[a.m.], not 5:30." A Fibre Channel SAN is like a backend LAN that connects servers and clients with shared storage devices. It can act as a single loop or interconnect vis switches and gateways. SANs are able with other buses, such as Escon, but Fibre Channel is favored for its improved distance and transfer rate (tokm

Breniser's SAN comprises three Andataco disk enclosures, a Windows NT ver, seven workstations, a tape library and two switches.

and sooth between

HP's OpenView SAN Manager is due by pext luly and will work as a module for HP's OpenView management frame-work. The first version promises the ability to map SAN topologies, track device health and launch device-specific config uration software; but it will work only with HP's Fibre Channel hardware. Support for non-HP devices and SAN reconuration will follow

Lack of 'a normal mana work has been the single item inhibitor to SANs," said Michael Preerson, an anafyst at Strategic Research Corp. in Santa Barbara, Calif. He said HP's move is the first in the framework market.

Although most high-level SAN management products agen't due for months. several SAN middleware applications are available today. An example is the Shared Storage Option (SSO) announced last week by Seagate Technology Inc. in Scotts Valley, Calif SSO works with Seagate's Backup Exec backup software and mediates the sharing of tape backup resources among servers on a Fibre Chan-nel loop. Before this type of middleware, such sharing required data movement

over the corporate LAN. We have a significant amount of backup traffic on our Ethernet network. and with [SSO] It should be all but eliminsted," said Peter Buttros, senior storage architect at AT&T Corp. in New York. Buttros' group handles backup for up to 116,000 clients. He said SSO is planned for deployment on "hundreds, maybe thousands" of NT servers.

"We expect tremendous savings from (SSOL" Buttros said. He said SAN-based buckups aren't limited to off-peak time and give him more flexibility with his staff. "And from the support aspect, (sharing tape) means fewer products, less training and less purchasing. O



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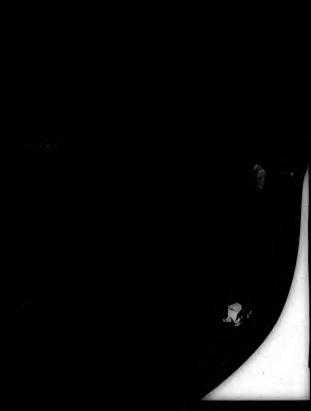
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Managing

KRAFT'S 5% SOLUTION

Kraft Foods' retention strategy focuses on community building and personal development. The result: An IT group with a turnover rate of just 5%

By Kathleen Melymuka

oney isn't what it's all about," says Margaret Schweer. She should know

As director of human resources for information systems at Kraft Foods Inc. Schweer has had a hand in knocking down the annual information technology turnover rate from a respectable 9% or 10% to a stunning 5%.

on what IT people really want: to de- that work together to show people we velop their technical, business and care about them. If you have that situleadership skills; to know where ation, why are you going to leave it?" they're going in the company; to try of mutually supportive achievers.

keeps people," says Dave Diedrich, the 20% [turnover] range," he says. director of integrated systems services

Schweer says Kraft did it by focusing at Kraft. "I think there are 50 things

That approach works, says Brad things new and challenging; to have a Jameson, a principal at Fought, Jamechance to contribute regardless of son Associates, a Chicago recruiting rank; and to be part of a community firm that has worked with Kraft for years. "Their numbers are great, espe-"I don't think there's one thing that cially with a lot of companies up in

"Community ... that's the magic ingredient I've grown to

understand." - Jim Kinney. Kraft CIO



According to a Gartner Group study, employees without formal training use less than 25% of their applications. On the other hand, trained users can increase productivity more than 165%. And those numbers can make a big difference next time you need to get a budget approved.

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KRAFT'S 5% SOLUTION

CONTINUED FROM PAGE 69

"The key things that keep people tend to be the intangibles," lameson explains. "We find a lot of young people want to learn the business. Kraft puts a lot of emphasis on that. Their business is very tech-intensive and they'ee on the leading

edge, so their people can continue to Kraft's oSo full-time IT employees

seem to agree. "I haven't had one nega-tive day at Kraft," says Kurt Duncan, an associate business analyst who recently graduated from Indiana University. *I'm porking on very new technology that's constantly changing and expanding. I have a new focus every day, and I get to interact with a lot of different people." "You know that you're important to

the company," says Lori Etelamaki, associate business manager for sales information systems. "I get a lot of special projects, and that tells me I'm of value. They let me explore other opportunities.

I like that Schweer says retention has always been a hot issue at Kraft, but in the past few years IT's human resources function has become more sophisticated in its undenstanding of what effective technical community members need, how and why they choose employers, what they

want from careers and what a retentionconducive environment looks like Kraft's success starts with a partnership between IT and human resources. I've eiven a lot of attention to educating HR on the uniqueness of the challenges we have," says Senior Vice President and CIO Jim Kinney. "And I have [HR] spe-

cialists who understand these issues very well. (Schweer) has become our champion within the HR function."

The first ingredient for retention is to hire the right people. Kraft uses its college internship program to attract eager learners with interpersonal skills and a keen interest in business. "Our interns cruits on campuses. They learn the business, they're exposed to different technologies, and they're responsible and accountable right away. We're known for that on campus."

About 70% of interns who are subse quently offered jobs accept. For college recruiting, a cadre of IT managers and recent hires descends on the campus. About the only people not in evidence are human resources folks. "I don't go on campus," Schweer says

"It's [IT] people (whom students) want to talk to. I don't get between them." Candidates come to Kraft for their sec and interviews in groups of about three dozen for a day and a half of receptions. interviews, technical demos and esprit de corps building. They physically engage with everybody from Jim Kinney to entry level," Schweer says. "The people you work with are a very important part of why you choose to come here."

Once hired, new employees start down the never-ending road of development.
"We give a lot of attention to develop-ment," Kinney says. "We have trained our managers on how to set up objectives, provide ongoing feedback, conduct

performance reviews and set development objectives. And we check on that: we don't make that an empty exercise."
The IT career path at Kraft provides both technical and managerial oppor uties; everyone has access to an IT are just as likely to ask me about going on for an MBA as they are to ask me if they can go get an Oracle class," Schweer says.

And managers feed ambitions. "I don't limit them to technology," Wilson says. 'If they're working on a finance system and they want to figure out the basics of finance, I say, 'Go take a finance course.' I'm keeping them

A new effort to keep people growing at Kraft is its 15 Leadership Program.

which is focused on developing a net work of midlevel IT leaders who understand the business.

Each participant works with an exe-cutive mentor through the one-year

Now postings include a discussion of the technology, the specific application, the project and the applicant's place in it, client interaction and growth opportu-

The commitment to movement comes through in the ranks. "If I want to try something else, they're right there for me," Etelamaki says. "I always have another challenge."

Everyone's contribution is valued. A month after Duncan started at Kraft, for example, he presented Schweer with a two-page list of ideas on how to impr recruiting. Schweer opened the way for inn to discuss his ideas with the appro priate people, and ever since, she says, "we've been busy implementing Kurt's

And Wilson says, "It doesn't matter what your level is, your ideas are always accepted. I think that's one of the reasons it's easy to keep people."

IT folks at Kraft say the top reason they stay is the sense of family. "We've really worked on developing a sense of com munity," says Kinney, who has a standing poontime basketball game with IT employees. 'That's the magic ingredient

I've grown to understand. "If you don't have a con Wilson says, "they're going to leave for

more money because there's nothing more money because there's nothing that's keeping them here." Because IT people stay at Kraft, they bring a breadth of experience to sulving business problems, and they develop re-lationships with husinesspeople that give an invaluable boost to their effectiveness

as change agents, Schweer says Of course, success such as Kraft's pre-

supposes the basics. Compensation is conspective, although not leading-edge. The company takes work/life issues seriously, providing flexible hours. telecommuting and part-time options when employee circumstances require it The campus is new and attractive, with nerks that include a company store and a health club. And dress is casual. "There are no secrets |to retention success;" Kinney says. "You have to rec-

ognize what kind of people IT profes-sionals are. They want challenging as-signments, want to be part of delivering something of value to the business and want the opportunity to improve their skills as time goes by You really have to practice what you preach in terms of giving them the chance to maximize their own canabilities and perfor "It's a full-court press." D

Kraft's retention recipe: Internship program stresses IT/business immersion accountability.

- Entire iT community interacts with job candidates.
- Comprehensive, multimedia IT tool kit guides career
- development with road maps from job to job. P Technical and business training encouraged, tuition
- > Comprehensive IT leadership programs at middle and upper levels.
 - Hiring from within and intracompany movement encouraged, facilitated.
 - ideas solicited, accepted at every level.
 - IT community building encouraged.

tool kit posted on Kraft's intranet. The site provides development tutorials, links to job poetings, training courses, divisi sites (such as Maxwell House, Kraft Cheese and Oscar Mayer Foods) and function sites (IT, human resources, finance). Those sites discuss the skills and competencies required in their area as well as in specific positions and

"People know what they will need for the next level," says Debra Wilson, IT director for the pizza division To reach the next level, Kraft encour-

ages IT employees to devote to days each year to development activities. Kraft offers an extensive IT and business training curriculum and also offers a tuition reimbursement program. The kind of people who are attracted to Kraft program, which includes about so days of activities. There are seminars on lead enhip issues, work experience in various parts of the business, outside conferences and discussions of philosophy technology and business. Development continues at the senior level, where managers attend outside leadership development programs, such as those sponsored by the Society for

Information Management

Kraft is committed to promoting from within and Schwert, who moved to her job two years ago after 12 years in Kraft human resources, mitially was dissatis-fied with the volume of intra-Kraft job movement. She discovered that job post-ings were so general they didn't motivate

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Answers for the Information Age

IT project managers need help from 'champions' to succeed. Here's how you can keep them on your bandwagon

Cheerin

By Julekha Dash

Project managers know that a project champion's help is key to their success. But a champion can get distracted and lose interest, especially as other projects and day-to-day work vie for attention.

So, how can project managers keep their "cheerleaders" motivated? Memos and meetings are obvious ways. But Kathryn Lawton, a vice president at The Chase Manhattan

Bank Corp. in New York who recently championed a smart-card project. advises that although meetings are essential, you shouldn't waste anyone's time

*Keep [meetings] short. Cover everything [necessary] and then get on," Lawton says, "Only people who need to he there" should he invited. "People who don't need to be there tend to slow things down," she says. Even if your project isn't going according to plan, don't keep your champions in the dark, adds Nicole Grace, a project management consul-tant at Seagram Co. in Montreal. They will feel betrayed if "you've kept something from them that will make them look bad."

USE THEM OR LOSE THEM

To keep champions, call on them reg-ularly, says Jillayn R. Wolleat, who oversees about 50 projects as director of program management at Bell oth Long Distance Inc. in Atlanta. *Break down a project into chunks

and ask for advice on smaller tasks. Keep it small and do it more frequently so (the champion) gets used to helping on day-to-day issues," she ests. For example, if you're man-

new product, get the champion's input on particular phases, not the overall project, Wolleas says. Christopher Higgins, a senior vice president at Bank of America Corp.

in San Francisco, who oversees about 100 project managers, says that as a champion, he likes to feel needed. "Let the champion know that what they're doing is really making a dif-ference" and provide a mechanism for constructive feedback, he says.

THE "VISION" THING

Recause it's likely that your champion has seen many projects fail, prove that yours won't. That means uilding credibility as a leader. John Timmons. a project manager at Lock-heed Martin Corp. in Bethesda, Md., suggests that project managers share their strategy for success at the outset. You have to convince the champion that he or she is the "right

person to take the concept and make it go," he says. Creighton Warren, vice president

at Heller Financial Inc., a Chicago commercial lender, says that while managing a technology upgrade proj-ect, he made presentations to senior agement at division meetings and wrote articles on the project's progress for internal newsletters. That way, the champion "sees you as an owner of a project." Warren says. Another way to build credibility: Remove as many obstacles at the beginning. That means getting the right resources: people, budget and

"Don't always go low-cost. Go high-quality," Warren says. "It shows that you're giving the project an opportunity to be successful." Small details such as reserving a meeting room ahead of schedule send a clear signal that you're serious about get-ting things done, he adds.

Gopal Kapur, president of the Center for Project Management, a consul-tancy in San Ramon, Calif., says project managers need to address how end users feel about the project. "If the project champion hears discour-aging remarks from stakeholders, he may lose interest as well," Kapus says. He adds that manageme buy-in is particularly important "because many [users] take their cue from their immediate manager." Lawton was impressed that her project managers invited end users to a meeting to demonstrate features of the automated teller machine soft-ware before the project was complet-ed. Not only did the meeting show how the system would henefit consumers, but it also helped the busi-

work it takes to do these things." To make your project stand out, make some noise. Many project managers suggest celebrating each mile stone by taking team members to hunch, throwing a pizza party or post-ing banners in the hallway to high-

light progress. Timmons has a different approach His advice: Nominate your project for an award, sponsored either by your my or an external organization Win or lose, it's still "a great motivating technique," says Timmons. whose project, an electrical utility upgrade, won a 1998 ABT Corp.

Project Leadership Award.

It's like dating, Grace adds. After a while, a person gets bored, and you need to do things to keep it exciting or the "flame will die. You need to appeal to the human side of things," she says. O

Dash is a freelance writer in Birminehom Ale.

FIVE WAYS TO PUMP UP YOUR CHAMPION

- Melatele spee, honest dislague. Schedule meetings and rend memos to leep y champion informed, even when things aren't going according to plan. But keep the conversations short.
- Keep year champion anguged. Asking for ongoing input sends a clear signal that he or site plays a crucial role. And don't be afraid to ask for halo.
- Create vielbility. Throw a party, hang banners or go after an award. Create excitement that will keep your project on the champion's radar screen.
- Isselli confidence. Communicate your strategy for success and let your champic linear as you attain each milestone.
- to your part to get and users' support. Clearly delive how the project will be from and how you and your champion can maintain or boost their support.



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and economic value by asking the insured parties to weigh the costs of potennally excessive premiums against the exposure to losers. In this way, insurance puts in place a market mechanism for judging a technology's reliability. In the absence of insurance. government regulators and inspectors step in, often with solutions that are worse than the situations they try to remedy

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THE POINCIPLE OF FORTUITY Those who doubt whether

minimize the losses, but it's possible to insure against computer ricks would be well served if they became better acquainted with the underlying theory of insurability All mourability is based

on the principle of "forturty," which states that a risk can't be insured when a loss is certain. Moreover, a risk can't be insured if it could have been avoided by taking generally known and easily available preventive measures. The principle of fortuity shows that computer risks are insurable - if practitioners practice their craft in a more prudent manner. How then would fortury apply to the manage-

surveys that suggest that ment of computers? Companies pursuing overcomputer projects expenambitious and reckless projence material cost and ects, such as massive, rapid, schedule overruns or get enterprise re-engineering projects, would find that canceled, that chalks up untold billions of dollars in they aren't insurable. Firms losses suffered by organizathat can demonstrate consistent delivery of high-quality And if one contemplates software and secure and various failure scenacios. reliable services will enjoy such as a global Internetlower insurance premiums borne software plague or - and management will get as the lever for making the an independent confirmavalue of software quality a deliberate acts of informameasurable benefit.

from that the IT staff ign't

doing something foolish. Projects with documentation of the precautions taken

to protect everyone affected by an information system would be insurable. That would encourage IT man agent to get their bouses in order and accumulate records of on-time, on-budget, secure and quality results. MANAGEMENT

IMPLICATIONS The advent of computer risk

insurance is likely to have an enormous effect on the IT world - both on corporate consumers and vendors of information products. Software without warranties (whether in shrink-wrapped packages or as part of a consulting products will cease to be viable. IT executives will have to comply with public standards for systems development rather than improvise.

Information managers will have to think about the long-term impact of their systems. Otherwise, they will fall prey to the long memories of litigation lawyers who will try to do their best to demonstrate negligence — not fortuity.

Stressmann (coo@stacorp. com) is betting on insurance

PLAYING THE RECRUITING GAME

Recruiting IT taxent is a Inacom Corp. Literally. management services company, so-hot talent by enticing techies to play ment services company, snares Techno Challenge," a high-tech assess ment tool disguised as a game, on its Web site (www.inecem.com). The game has three levels of difficulty; players who starly drawing for a \$1,500 gift certificate. And their names and contact infor-mation are forwarded to recruiting. "We get a list of people who get to the third

call right eway," says Eva Fujan, vice dent of technical recruiting More than 2,000 people have played

the game since it went online in Dece ber. Of those, a couple of hundred h hit the third level, Fujan says. She doesn't know how many have been hired because of the game, but \$0% to 90% of third-level players have been sterriewed. The game is also used to ouslife informs dates who use traditional cham we're interviewing for 20 system es, we can say, 'May the game first,

and see how you did," Fujon says.

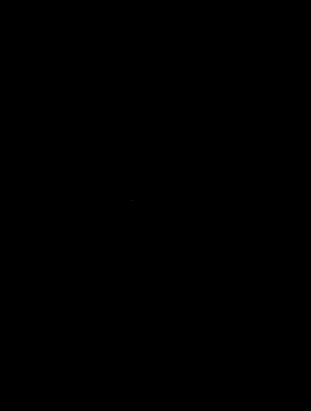
new approach to recruiting, called Inacom World Tour, designed to app to young techies. Inacom sets up the game at recruitment fairs, where pot tial candidates are urged to test the skills. The company also distributes "game tickets," which look like ticke

a rock concert, urging people to play. World Tour is the brainchild of Fuji who took over recruiting for Inacom tw years ago after 12 years in sales and marketing. "I took a sales and mar focus," she says, "I watched my son, who is 15, playing CD-ROM games, thinking, This is the way you should do these things. Make it fun." - Kuthleen Melymui

ASSURANCE. **GET SOME INSURANCE**

FOR IT

PAUL A. STRASSMANN



me has come for computer risk insurance. It be one of the most important innovations in information management, exceeding most recent technological advances.

ance for computer-caused

also for the added assurance it will give them about the trustworthiness of their IT

staffs. Operators of com-

those serving electronic commerce, will be required

by customers and their legal

usel to maintain third-

erruption insurance cov-

stold busions or occurs ... sees suffered by organiza-

And if one contemplates

puter networks, particularly

ance premiums may oon become a large comment of every organiza-

ance is critically imof for our civilization to on. Without insurance. es may not fly, sutoes must stay in the garage, X-ray machines may ut down, chemical facto ries may close and buildings may not get construction permits. Complex machin-ery and facilities are insured because their risk of failure is widely recognized and requires the protection insur-ance offers.

Insurance delivers social and economic value by ask-ing the insured parties to weigh the costs of potentially excessive premiums against the exposure to losses. In this way, insurnce puts in place a market sechanism for judging a schnology's reliability. In government regulators and spectors step in, often

schedule overruns or get canceled, that chalks up untold billions of dollars in with solutions that are worse than the situations they try Insurance is already available for business interrup-tion risks from year 2000 various failure scenarios, such as a global Internet-borne software plague or deliberate acts of informaheres. If computers fail spite your best practices and efforts, the insurance

There's no reason sim damage estimates approach those from an accident at a coverage can't apply to other computing situations.

I believe business execu suclear power plant. tives will be buying insur-

ose who doubt whether

possible to insure ainst computer risks became better acquainted with the underlying theory

on the principle of "fortuity." be insured when a loss is party liability and business certain. Moreover, a risk can't be insured if it could have been avoided by taking The simple fact is that risks from IT malfunctions generally known and easily available preventive mea now rank with earthquakes sures. The principle of for-(a mere \$30 billion to \$60 risks are insurable - if billion exposure; and hurri-canes (only \$5 billion to \$15 billion per incident) in popractitioners practice their craft in a more prudent tential economic losses. If you also believe the various fortuity apply to the manage surveys that suggest that more than 50% of all major computer projects experi-

enterprise re-engineering projects, would find that they aren't insurable. Firms tent delivery of high-quality software and secure and reliable services will enjoy lower insurance premiums

tion that the IT staff isn't

Projects with docus tion of the precauti to protect everyone affect rs to get th order and accumula

nce is likely to have IT world - both on corposulting product) will cease to be viable. IT executives will have to comply with public standards for systems

Information managers will have to think about the long-term impact of their systems. Otherwise, they will fall prey to the long lawyers who will try to de their best to dem negligence — not fortuity.

com) is betting on insurers as the lever for making the value of software quality a measurable benefit.

ASSURANCE. **GET SOME** INSURANCE

FOR IT



PLAYING THE RECRUITING GAME

Review Center

touch rtual

Intranet-based corporate training can save you a bundle, hut there still are limitations, according to users

omnanies that have used intranets for training report sive than classroom training and more flexible than M-based training. Intranet training makes it economical to train a few people at scattered locations and to make training available at times convenient to students. d training also offers more interactivity than other forms of computer-based g, such as CD-ROM programs. Today, that interactivity can include a live audio th a classmom teacher or a shared-screen environment in which an ook at the work on a student's screen and offer advice. Video isn't in ad use yet, however because of bandwidth limitations

the effectiveness of intranet training. Managers experienced programs cite several drawbacks. For example, some systems don't allow students to ask questions or interact with other students, and some users find intranet training too depersonalized. Even its strongest proponents don't suggest intranet training is a replacement for the classroom version.

Though information technology courses seem well-matched to intranet instruction, it's unclear whether other disciplines — such as sales — can be taught that way. It's also unclear whether intranet training will be viewed as a burden by students if corporations push responsibility for training onto workers, forcing self-study on personal time rather than work time. For cost reasons alone, intranet training is likely to catch on in a big way. But its adoption may be limited by how much users are willing to accept it as a substitute for classroom training. In the following pages, we profile six organizations that use web-based training. A treuch of virtual class, page 78



CONTINUED FROM PAGE 77

Clarke American Checks Inc.

BURDMANY: Clarke found intranet training a cost-effective way to reach a bandful of employees at each of several widely scattered plants. The training's interactive qualities give it a "stread classroom" feel and keep students excited about the learning reporter.

INTRAMET TRAINING APPLICATION: Live training on Microsoft Corp.'s Windows NT and Lotus Development Corp.'s Notes includes audio of the teacher speaking as well as PowerPoint presentations, Excel spreadsheets and screen captures of NT functions. About So plant

screen captures of NT functions. About 80 plant managers, accountants and office clerks will be trained at 20 locations.

STRATEUY) Training began in April as part of a SAP America Inc. It y implementation. When the firm goes line with Ny, students will be able to call up previous SAP sessions so the instructor can review what they did while other students watch on their acreeus. Intruser training also will include forums for sharing best practices and problems resolution stories.

TECHNOLOGY. Clarke uses an application from Centra Software Inc. in Lezington, Mass., for Its intranet training. The technology enables the instruction sallow one trainer at a-time to control the software application on the screen, or to speak using an audio brander.

a-time to control the sortware applications on the screen, or to opera using an audio brander.

NOW IT WAS CHOOSEN "We saw Centra's software in a live demonstration at a ranker thorse, then strated to measure other companies against them; or condent find sampholy does that just jumped out at us the way they did," says SRM Massrudee, discorts of clusture management.

NOW IT COMPARES WITH OTHER TRAININGS "You configure SAP to work the way your leasurest does, and a cannot CD-ROM might not be quite the way you do it. Classroom training would be more expensive than the intranct because we have multiple locations. The intranct is a virtual classroom."

Magruder says.

Add Mary Martin, a plant accounting manager in Timonium, Md., "If you have other people involved in the training, they probably have the same questions you do. With intranet training, you can ask questions or listen while

BEBESTER 1 can't fly a training team out or bring a person here for a week to de a course for on person, if I guil people into a vistual clasaroom, I climinate the travel cost. Magnuder says. Besides, if we trained 80 prople using a pusside training firm, we would have had to pry Stap per person. We got an immediate psylack on the software purchase because we avoided paying that fee."

SIGNATURE: Learning styles must be altered because the teacher can't use visual case from students to gauge how well they understand the material. For example, each sudent neight be asked to chick on the "X" key if he or she understood what was said.

Fujitsu Business Communication Systems Inc.

BUBBLARY Equipm has used the intranct to deliver specific sales force training it previously delivered in the clastroom. While intranct training lacks the face-to-face' guality salespoople may be accustomed to, if does how the benefit of poording trainess with a database of selling tips and experiences compiled by others who've taken the training.

APPLICATION: Since June, a half-dozen trainees have tested a marketing curriculum called "Selling to the Very Important Top Officer."

ETRATEOY The firm wants to reduce the cost of sales by cutting the length of the sales cycle. It plans to train 100 U.S. field salespeople and a few inter-

TECHNOLOGY: The application is based on sechnology from Pensare Inc. in Los Altos, Calif. It can be viewed in multimedia form with the voice of a real instructor accompanying an animated person on the screen, or it can be read as text-only.

the screen, or it can be read as test-only.

"Audio and animation should only be used if they accomplish something you can't do with test and pictures. I can reed faster than nomeone can speak or animate." says Don Shapiro, director of Web development and a former salesperson who has taken the training.

NOW IT WAS CNOSEN: The firm already liked the curriculum for classroom presentations and choice the Pensare software because it was the only intranet implementation of that course.

tranet training," Williams says.

HOW IT COMPARES WITH OTHER TRAINING.

Intranet training is "less than half the cost of classroom training, if you include the cost of the class and travel expe

classroom training, if you include the cost of the cases and twiere expenses to heigh people in from the field, "say-judy Williams, manager of sales training, Unlike CD-ROM training, the instance tensibles the firm to build a "house dept deathset" of success stories that other salespoole can use. "When you have an instructive-led class, you wait until you have eight to 11 individuals to make it con-effective. But one employee can go through isindividuals to make it con-effective. But one employee can go through is-

SHORTCOMMENS: People don't get to see their peers face-to-face, or to continue relationship-building after class. "Obviously, the thing you miss is the ability to ank questions, to construct has to be developed very well. "Shapiro says. "I'm not convinced that sales training should be done via this technology —abbrough if any technology could do it, that is it."

ADVICES "Have a pilot program and develop an internal group of advocates who can articulate the benefits. If you hear it from someone who isn't in the training organization, the credibility factor is increased tremendously." Williams says.

A touch of virtual class, page 52



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CONTINUED FROM PAGE 78

Merrill Lynch & Co.

SUMMARY: Merrill Lynch is training its own Web designers using outsourced intranet training. In the long run, the firm may bring the training in-house.

APPLICATION: The courses taught include HTML, the Web programming language: Active X; and JavaScript. So far, the project has been piloted with about a dozen people.



STBATEON If the pilot project running through the end of this year is successful, training will be relied out to several dozen other Web information technology professionals in the firm's Sales Training Technologies Croup. This is for people who do not have time to take classes because they are busy, 'any James Jawler, vice president of interactive training technologies.

They can take the training at their deaktop PCs

"They can take the training at their desktop PCs before 9 a.m. or after 5 p.m., at lunch or at home," Lawler says.

TECHNOLOGY: DepitalThink in San Francisco
that provides the training resides at DigitalThink, and training provided over
the Inserner. If the training is deemed acceptable, Merrill Lynch may provide a
link from its instruct web page to the DigitalThink server or put the courses
on a Merrill Lynch instrument server to improve response time.

NOW IT COMMANS WITH OTHER TRANSMISS. It's quicker and charper han classroom training, either inside the company or out of it. But in accompany accustomed to classroom training, the trainers will have to get used to it. This empowers employees to train themselves and not to rely totally not the firm to train them. It complements whosh up training but is not a replacement for it. "Lawler supplements or the complements of the comp

BENEFYTS: "One of the big advantages is. DigitalThink does exclasively Web topics. So its expertise is applied only to that and not diduted with other things," Lawfer says, "Also, if you have a tight instaining badget, here is another vehicle by which you can train at less cost. You put the burden on employees to do some of their own training.

SHORTCOMMORE Employees may want to do this during business hours to the detriment of their work, which has to be managed, Lawler says.

Cypress Semiconductor Corp. San Jose, Calif.

SUMMARY: Earlier this year, the programmable logic division of Cypress held an online seminar for potential customers about a very high-speed integranted circuit hardware description language. About yoo engineers in at countries participant in the one-hour introductory class, which was offered over the Internet through an outbourcing arrangement.

STRAYEDY: The company is considering using the software as an intranet application for updating field sales offices on product status and sales techniques for specific markets. In the meantime, it's one way to reach out to new customers via the Intervent

TECHNOLOGY: The Education News & Entertainment Network (ENEN) in San Diego provided Inhernet broadcasting facilities to deliver the training reminur. While in chat mode, participants could tryp in questions that were answered by audio over the Internet. Questions and answers also were resulable in real-time text on the screen.

HOW IT WAS CHOSEN: "We dishn't do a competitive analysis. We looked at what ENEN had done with other competitors in our field who used their technology and felt comfortable giving it a try." says Linda Stone, software marketing manager of the programmable logic division.

NOW IT COMPARES WITH GTHER TRANSMO could be taught online. But as far as somehody really utilizing the information and using it to do exercises, it's more convenient if somehody is colocated with the teacher to ask questions. Our goal was to offer the one-hour basic class online, then unwite the participants to a demo at a customer site or other location." Stone

"It's difficult to get out of the office to go to a vendor presentation that's not near me. But I can close my door to do this without too much trouble," says George Dotts, manager of software engineering at Hillistic, Ill-based I. & I Engineering, a manufacturer of industrial controls for the petrochemical industry.

SHORTCOMINGS: "I'd like to see the technology improved. Some of the participants lost their connections with the ENEN server," Stone says.

ADVICE: "Evaluate the technology by getting advice from those who already have used it. But the cost is low enough to experiment with it," Stone says.

Crestar Financial Corp. Richmond, Va.

INTRANET TRAINING APPLICATIONS The bank, which has nearly 500 branches in Virginia, Maryland and the District of Columbia, is migrating mainframe-based employee training to an intranet. Initial training is about to begin and will involve 9,300 people, who will be trained on bank-specific



STRAYESY: Intranet training, based on technology from Pathlore Software Corp., will help teach employees newer, Windows-based bank applications. That training couldn't be done on the main-frame, as had been done in the past, because it couldn't simulate Windows' buttons and drop-

NOW IT WAS CHOSEN: "We looked at three training packages with similar education features. But we chose Pathlore because of its full range of administrative features, such as student registra-

tion, tracking and reporting," says Mary Ellen Winks, senior vice president of the corporate training depo HOW IT COMPARES WITH OTHER TRAINING: "If you need to share ideas

THE IN COMMISSION THE STREET THAT THE THE THE STREET TH are more interesting looking than maintraine sea pacce training, which was their only and had golden pretty looking the ability to jump around in a Self-directed intraneit training provides the ability to jump around in a course or jump to a different steaching unit. Compared with mainframe, CD-ROM and disk-based training, the intranet method simplifies tracking who took courses and what level of materity was achieved.

SHORTCOMINGS: The mainframe computer-based training experience may not help much when it comes to intranet training. "When you buy a package like this, you need to have the right team to design the courses — meaning the right kind of technical ability plus the instructional design knowledge," Winks.

She says the technical learning curve for mainframe-oriented training experts is huge when they move to an intranet-based environment.

ADVICE: "If you are a typical training department, don't jump into this and try to do computer-based training over the web. The training department has to get together with IS to make this work," Winks says.

University of California at Davis

SUMMARY: Intranet training is one way to reach a huge audience of IT pro-festionals, staff and students while avoiding the need to use more of the university's scarce classroom space. Part of intranet training's effectiveness is its ability to offer a choice of a large number of courses — something that CD ROM training doesn't provide, according to university officials

APPLICATIONS: The university offers you IT courses — sinsed at IT staff, uni-versity staff and midester—that include dealoop applications, I year program-ings, Oracle dealinisations and Unite systems administeration. The training was introduced in May about you people had taken course by September. Although that's relatively few people in relation to the total number of constes, officials say it's because the university has a small population during the

TECHNOLOGY: Courses from CST Systems Inc. in Menlo Park, Calif., can be accessed through about 14,000 shared PCs and additional personal machines.

NOW IT COMPARES WITH OTHER TRAININGS "It's costing us in the neig NOW IT COMPARED WITH OTHER TRANSMOWN IT a corting us in the engine-behended of Sp.,000, which is less than the cost of one instructor and one-ternh what would be charged to commercial customers. That's because we're egiting it on a solume and educational discount." says Phe Karsa, manager of IT client services. A course can be taken when and where it's convenient for the trainer. Unlike CD-ROM-based instruction, the intranset makes all 500 courses available at any time.

DEMEPTES Intranet education is expected to help retain technology stuff be cause it includes free courses needed for Microsoft and Novell certifications cause includes tree courses needed for Microsoft and Movell certifications. "Any campus person can use it, so we can train a, coop repel with one pur-chase," says Ann Manuker, who provides derktop technical support at the university. "If I had to pay for it, griting the equivalent classroom training on the 300 intranet course titles would cost me more than the software license

SHORTCOMMOS: "For me, live classes are more stimulating," Mansler says.
"The computer-based stuff is barder to sit around and do because it's hard to focus on for more than half an hour at a time."

ADVICEs 'Different schools of thought about how people learn are embodied in different software packages, so pick the one that fits your model of how people learn," Kava says. (1

Alexander is a freelance writer based in Edina, Minn. His Internet address is s.j. elexander@recketmail.com.

of amountainers in the intranet- and computer-based training market

In Depth

Inside information

We talk to the authors of a browser-wars book for their take on the Microsoft antitrust case

> hen the U.S. Department of Justice filed an antitrust suit against Microsoft Corp., husband-and-wife technology columnists Michelle Slatalla and Joshua Quittner found themselves at the center of the industry's hottest story.

> > Slatalla, 37, who

writes for The New York

Times, and Ouittner, 41.

who is a member of

Time magazine's staff,

"Microsoft is attempting to cast its actions in a new light that would be favorable in court."

e Slatalla spent 18 months reporting on Netscape communications Corp.'s Internet chal-

book, Speeding the Net: The Inside Story of Netscape and How It Challenged Microsoft, came out in March.

Though the couple kept their reporting

Though the couple kept their reporting neutral in the book, they formed some strong opinions about the browser battle. Shortly after the Justice Department and Microsoft submitted their witness lists, Slatalla and Quittner spoke with Leslie Goff about their unique take on the case.

Communications Corp.'s Internet challenge and Microsoft's response. Their

CW: A lot has happened since your book came out. What do you make of all the allegations and counter-allega-

QUITTNER: 1 think Microsoft is obviously a brilliant company, but 1 really believe they overstepped Jore. Microsoft should have let [Netscape] develop but clearly was threatened by what was going on.

Microsoft was able to leverage its business to basically obliterate this tocompany, and that's not fair. Also, I believe that being able to control the operating system gives them an unfair advantage in the software business and that it's unfair not to separate one from the other.

rate one from the other.

SLATALLA As this case drags on, Microsoft is attempting, very overcily, to cast its actions in a new light that would be fervorable to [it] in court. If has precently alreaded as he of information of the court of

Netscape's incorposation.
The facts remain the same: Since 1993, a few people at Microsoft saw the Net as an enormous market opportunity. They were casting about for ways to link the business to the emerging internet market, and over time they managed to achieve that goal. To what extent that process as led by Microsoft studying Netscape remains to be determined in court.

CW: Can you cite an example? SLATALLA: As the case unfold this summer, Microsoft talked of an executive retreat in 1994 as an indication that Microsoft executives had been very clearly intent on building a beowser before Netscape incorporated Well, as early as '96, Microsoft's [pub-lic comments] about the evolution of its Internet strategy [dealt with] that retreat very differently - they said some memos were distributed and there was a general discussion of how the Net was an area to focus on. That retreat was widely reported on before, and suddenly it starts being written about in 1998 as some new revelation of some Microsoft strategy that predated Netscape.

CW: What did you think of Netscape's recent allegation that Mi-

"The case turns on who knew what when."

— Ioshua Quittner

crosoft approached the company about divrying up the browser market in a Mob-style fashion? That wasn't in

QUITTHIRE That was something in the court papers, but he people as in Necrage never told us. I thought it was interesting that it came out after the fact, but in talking to Marc [Andressen] and others all Netters, no one ever mentioned that Microsoft was to craze as to divide up the market Mobayle. I seem back to the company and and, "Why didn't you bring this up?" And they and, elaptically, didn't was to discass until the yield didn't want to discass until the yield didn't want to discass until the yield court papers. That struck me as old, and I don't livow what to this fold.

CW: How surprised were you that neither side plans to call Microsoft's Steve Ballmer or Bill Gates? QUITTMER I think this case will be

quitt when I tunk this case was or made or lost at the lower reaches of Microsoft. Obviously, Ballmer and Gates had a buge amount to do with the strategy, but the case burns on who knew what whon, and there were some dramatic moves at the lower reaches of the company that will determine the outcome. For example, in the book we wrote about a slideshow for Microsoft man-

agent, and the whole tone of that meeting was, "We are going to crush this company," In a normal business, when conspections are the same size and strength, hav's fine. But when you say, "We will take our operation system that is on 90% of personal computers and use on 90% of personal computers and use of the personal computers are personal computers and the personal computers are personal computer

CW: The people who side with Microsoft essentially are saying. "Let the market decide," and implying that Netscape is a crybaby. What's your take on that argument? SLATALIA: Clearly, the whole rea-

son for the Sherman [Antitrust] Act was because it was the strong opinion in government that, for whalever reason, the market wasn't capable of sorting out antitrust issues. And the law remanse robust today because there is a deep and abding distrust of monopolies and of whether, left to its own devices, the market could resolve what is perceived as a monopo-

listic situation.

Certainly, another argument is that as we try to understand products and technologies and markets that are totally new to business and how we live our lives, maybe the old laws aren't a sufficient set of checks and balances. But I personally haven't seen any evidence of that.

.......

CW: What will be the outcome of

the sui?

QUITTNIR: I think this is a case
that will ultimately make antitrust law
for the arst century, and I wouldn't be
surprised if any number of issues will
go to the Supreme Court. Then Mr.
croofs will be in worse shape than it
is now. Some of the issues Microsofs
has won at the appellane level will be

overturned.

I think it's clear when you look at the nitty-gritty that Microsoft used its position to create an anticompetitive climate and that, left unchallenged, it would severely stifle the software business. You can't play Bopa-Mole with

a new company.

Microsoft has said all along that it was given, in the 1995 consent decree, the ability to integrate as long as it in-novated. And it thank Microsoft's idea of that finnovation will be Sun [Microsystems In.C] as ml Metcage's and other companies' ideas of anticompetitive practices. And the Supreme

itive practices. And the Supreme Court will have to decide. I believe Microsoft will end up with a monopoly on the operating system but will have to unbundle the (applications) software.

CW: What do you think all this will mean for the business user? SLATALLA: It will determine the direction that companies will go in, to what extent consumers need to be protected and given choice, and

to what extent the market is gong to be left alone to make these kinds of

ofecasions.

QUITTHEE The laws are generally broadly written. I don't think there's anything hangely mysterious about this. The market have already chosen the Windows operating system and Microsoft as the provider of that. But I don't believe that they can be over-thrown overnight. Even if they were. I would argue that people would cominute to use Windows products for

the next decade or two.

People get all riled up and say this is a matter best left to the market to decide. If you look at how the jacofwarej market is set up right now.

the growthy right. But so that five years from now, Mccrosoft, left unchecked will squash the market and in the process its stock will go up and innovation will go down. Or if Mccrosoft wires up and restructures, then you could have an outcome like the ATET (directiture), which was good. Because of that, we have more unneasted, it.

The software industry is something this country has created and excelled at and lift Microsoft is restructured; the industry will just explode into a billion pieces, and other markets and the economy will be served—new jobs and new services and power distributed to the many instead of the few.

CW: Will we over know the truth about what Microsoft did in the browser wars? SLATALLA: A lot depends on whether the case goes to trial or

whether it's settled.

QUITTNER: I think (Nesscape's allegations) are definitely true, or enough are true. If you were in Microsoft's shoes, you'd do just what they did. That doesn't make it right. I

Goff is a freelance writer in New York.

IT Careers

Blind

programmers

could compete quite nicely in the IT workplace when the mainframe was king.

But today, as graphically oriented Windows tool kits displace the text-based mainframe development: blind programmers are facing an uncertain future.

Nonstandard graphical components in many new tool kits can't be read by the blind. That's true despite the help of screen translating devices that traditionally have enabled them to work alongside their sighted information technology co-workers. To a large extent, this is shutting blind programmers out of new client/server development projects. And it's hampering their careers more than co-worker attitudes about blindness ever did.

about the limitations of blind people, says Curtis Chong, president of the National Federation of the Blind in Computer Science. Chang, who is blind, is director of technology at the organization in Baltimore.

IT workers at some companies have learned that blind people can compete. But lots of others have never worked with a blind person before. and attitude-related barriers apply," Chong says

THE FRIENDLY MAINFRAME Chong says blind programmers have long been able to do their jobs in the mainframe world. After all, main-

frame languages such as Fortran. Cohol and assembler are text-based. Using screen readers - software that converts text on the screen to speech - blind programmers were able to read what was on the screen and do the same development work as sighted colleagues.

When PCs arrived in the 1980s, blind programmers could still do their work because the DOS operating he read with screen-reader software

Chong says. But with the arrival of the Windows eraphical user interfaces, which couldn't be converted to text, blind proers were initially locked out of the newer PC and client/server worlds.

That door was partially reopened for blind programmers when screen read er software was adapted to convert some, but not all, Windows graphical interfaces into screen-readable text.

But there was a catch. Screen readers could convert graphical interfaces to test only if certain programming conventions were followed. And as Windows interface technology raced ahead, software companies increas-ingly took nonstandard programming shortcuts in their software developer tool kits - shortcuts that rendered some items on the screen invisible to screen reader software.

BARRING THE WINDOWS

That has left blind programs severe disadvantage because they are

"Most of the new applications right now are coming from tool kits that blind people can't use," says Janina Sajka, director of information systems at the American Foundation for the Shind in New York. 'While there is some hope on the horizon that we can get tool kit companies to be more responsive to serving all people the prospects today are fairly

It isn't that people don't care, says Gary Wunder, a senior computer pro-grammer/analyst for mainframes at the University of Missouri in Columbia, who is blind, 'But everything these days has to be justified with a business case. If there aren't enough programmers who are blind who want to do something, why do it?

At the same time, blind programmers must face stereotypical ideas system was text-based. The text could

. .

some new Windows environments. Chong says.

"I know blind programmers who work in C and Visual Basic in addition to mainframe languages, because as long as they can get at a text file, they can do programming. But if the graphical tool kit you are using requires you to drag and drop items on the screen, you can't do it. Chong

Crista Earl, a technology resource specialist at the American Foundation

for the Blind, agrees. "There sure haven't been very many blind programmers who have broken into the Windows world. Io our database of 130 blind programmers, maybe a dozen have gone into Wio-dows development. The majority are working on mainframes," Earl says.

RESS OR A PROBLEM?

The problem faced by bland prog mers boils down to technological progress in Windows.

save Michael Freeman. a computer systems programmer in Vancouver. Wash., who is blind Freeman works at the Bonneville Power Administration, a government agency that manages electric power generated by federal dams in the

Western U.S. "You can't stop people from innovating, and I don't see tha

our screen readers will be able to keep up with that," Freeman says. He programs Digital Equipment Corp. mini omputers because they use a textbased operating system. "I still think it's worthwhile for a blind person to try a career as a programmer, but I do fear how well that person will do in the long term."

Although none of the blind proerammers interviewed said he believes be it in immediate danger of losing a job, there is concern about whether they will be needed in the future.

Freeman, who is 50, says he hopes there will be enough text-based work for blind programmers to last until he retires. *Up to now, I've been able to avoid Windows NT because the comnuters that control the power system

are for the most part VAXes. But as more things we use, such as time sheets and discrepancy reports, mi grate to the NT network, I'll need to do NT I don't know what will hancen all I can do it try."

Wunder also is concerned about whether he can adapt to Windows in the future. "With Windows, it's not only how do you write a program, but, once you do, how do you make sure that the humons line up on the screen? How do you make it visually attractive? I don't know the answer to that yet. . . I'll either be able to do my job here or I won't And I think the jury is still out. That's not very comforting because my daughter is still going to

need food Brian Buhrow, a senior syste eineer at the University of California at Santa Cruz, who is a blind Uoix programmer, says he is comforted that Unix is much in demand these days.

"And there also are opportunities for doing things outside the mainstream of end-user program ming, such as doing networking stuff that's not inherently visually oriented." Cruz savs. These opportunities

may diminish, but they'll be there for a Perhaps the mos ominous aspect of the Windows problem for blind programmers is

that they are being barred from truly mainstream devel coment, Saika says.

G-EYE PROGRAMI me blind programmers have dealt with the tool kit situation by trying to shift the Windows development projects they couldn't handle to others, "If you were lucky you could dele

gate that kind of work away. But if not. and you couldn't get at the underlying text of what you wanted to do, you were out of luck. And that was the frustration many blind people ran into," Chong says. "Then the only way a blind person could do the work was to hire a sighted person as a reader to helo run the machine."

Chong says.

That represented big change for

who had long used special devices to make themselves com

petitive with sighted people. Chong says the principal devices screen-reading software; a braille em bosser, which accepts text from a compute and prints it out in braille: refreshable braille displays, which

are tactile devices that convert a single line of screen text into braille in real time; and special speech synthesizers that convert text to speech and stop and start very quickly Another challenge for hind program

mers "Who will pay for all this expensive adaptive technology given the fact that when the employee

leaves, someone else may not find it uneful?" Sajka asks. Cost may not be an issue for the employer when it comes to screen-reader software, which costs as little as \$500. But that could change when it comes to the purchase of a braille display for \$3,000 to \$14,000. There are other technical obstacles

for blind programmers in their everyday work. Something as multing as the project management software used in some IT shops can pose a problem. Many assign priorities to IT projects with a color-coding scheme.

"A sighted person instaothy sees the priority of critical to not-so-critical projects," Wunder says. "But how do I get that same information? Sure, somewhere in the program is a number that represents what the color scheme ought to be, but my screen

reader can't read that. So I still write down my IT peojects on three by-five cards and work with my boss on priority

ATTITUDE ADJUSTMENTS And there are nontechnical challenges for bland programmers as welf The problem is one of attitude Chong says. What is it that an IT pro fessional expects from somebody who

Debunking myths and stereotypes

. .

Blind programmers still often face a variety of stereotypes. According to Curtis Chong. president of the National Federation of the Blind in Computer Science, the challenges that blind programmers face include beliefs that:

e Blind people aren't mobile and sit in a chair all day "It's not uncommon for me be asked to go to class for a wee to a different town, plus check into the office every night and get E-mail," Chong says. "And when we did disoster recovery exercises, I was espected to go along."

· Blind people can't handle printed inform human reader for 30 hours a week or use optical char nition technology to convert tent to speech or to braille."

 Blind people who can do programming work must be incredibly amort. "If the basic techniques are in place to do ith blindness, it shouldn't require any more genius for a ind person to do programming than it does a sighted

> is blind - do they think that a perso will be able to do work, function as a normal human being, socialize and get along with people in the work place? Or do they think a blind person is weird and can only pick up a phone? IT professionals should exact ine their thinking about blindness and root out the typical sterrotypes.

Do attitudes about blind program mers restrict their opportunities to be emoted? There's oo easy answer. Chopg says. It depends on whether management "has a positive acceptence of a person who is blind," plus whether the blind person can overcome society's tendency to undervalue the blind and push hard to be promoted based on ment, he says.

Buhrow says administrative jobs represent an opportunity for blind pro-

Bland programmers could do prod-

uct management that involves making decisions about people and products rather than about where to put code statements. I am a programmer. But I'm also a systems administrator, so I do a lot of things that are not programming but rather bardware instal lations and configurations,* D

Alexander is a freelance writer in Edina. Minn

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Lifestyles Of The Rich (Maybe) And Famous (Or Infamous)

Leaving the corporate fold for a career in consulting can be very appealing on those days when your boss is screaming, your co-workers are slacking off and your mind is swimming with all the injustices of the workplace. But launching a successful consulting business requires a lot more than giving two weeks' notice and hanging out your shingle.

CONTRACTING AND CONSULTING

greener. We spoke to five consultants who do a variety of 1099 and W2 projects about what it takes — and what it takes out of you - to strike out on

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tracting grass isn't

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"You need a business plan, and you need to rethink that plan every few months." Schur says. "And you may miscalculate and get stuck in an eddy. Even if your plan is right, your timing may be wrong."

@ Consultants aren't hired to suppost

"I have not yet met a manager, or anyone else for that matter, who does n't know how to 'solve' a problem," Blangied says. "My job is to implement that solution.

@ The personal is political. "Companies will tolerate prima douna employees, but not prima donna

consultants: Ego is the consultant's No. 1 enemy," Schur says. ® Learn to live with the limitations

Sometimes you have to imple relation that was know ign't the best one, and that is frustrating," Blanpi says. "But your contract is to deliver A, B and C, and a contract is a ® Managing your career is up to you. Once you make the commitment to consulting, no one is going to hold your hand anymore," Gainer says. "You have to manage your own time, education and finances, And your most valuable partners will be a CPA.

agency broker." MYTH BUSTERS: THE BOD INCEPTIONS ABOUT IT CONSULTING

iting will make you rich. "All things considered. I would probably make more money over the long haul being an employee, with benefits and stock options all paid for by my

employer." Pape says. "There is a tremendous amount of overhead involved in owning and running your own business, and it requires a lot of onbillable time to stay successful. Most clients have no chie about that - they still tend to compare the dollar amount against [the salary] they pay their employees."

- Consulting is a risky business. 'If you're a person that loves challenge and opportunity, you can be a good consultant," Kelly says. "There

HE GOOD, THE BAD AND THE UGLY: PROS AND CORS OF CONSULTING

> The freedom to determine your future.
"I get to decide whether I am going to take my next job in downtown New York or around the corner in Atlanta," Kelly says. "Sometimes the decision is sed on my personal life - like what does my son need over the next

six months? And sometimes it's based on the work experience because I can rely on my husband to take care of things.

- The flexibility to combine business *Consulting gives me the freedom to

a travel agent and, in some cases, an lecture at professional development seminars overseas and then take some time off to explore," says Schuz, an avid traveler.

· Exposure to a wide range of technologies, methodologies

'In the five years I've been in consulting. I've been exposed to many wildly different corporate environments, design philosophies, tools and

tasks," Blanpied

says. Working with different are plenty of opportunities out there." design philosophies, you learn what's impor tare and what isn't, and it also makes you fit into a new organization more

COMES Maying to deal with unscrupe staffing agencies.

"Sometimes I dislike their tactics," Kelly says, explaining that agencies often understate the requirements of

a job to secure a lower rate from the ultant. "Once I arrived on-rite to find that the company wanted me to do a totally different level of work than the agency had stated. . . . I did the work and considered it a less learned. Now I am very careful about the level of effort required."

► The constant travel and its

associated hassles. 'Ne matter where you live, it seems that your clients are inevitably somewhere else," Gamer says. "If I add it all up, I probably spend eight to nine months of the year on the road."

> You're always on the job.

"I'm never really 'off," Page says. "Even when I have time between projects. I end up spending a lot of it on business-related pursuits, like research, promotion, self-study and the

DAVID BLAMPIED, 44. Norwalk, Conn. In IT since 199 since 1994: specializes in developing database front-en

JEFF GAMER, 39, president and founder of ASC Ltd. in Hamilt Most. In IT since 1984; consulting since 1991; specializes in pr management, quality assurance and Visual Basic programming.

KAY RELLY, 46, Atlanta. In IT since 1970; committing since 1979 specializes in business performance improvement, with experien in all technologies from mainframes to the Internet. LORI PAPE, 42. (LOCATION TK). In IT since 1976, consulting 8 1992: specializes in developing device drivers and systems softwine Windows MT.

TENNEN SCHUR, age withheld, vice president and co-fine reductive Methods Inc. in San Mateo, Calif. In IT since a ulting since 1991 specializes in electronic-commerce and sid decision-support nations.

more mundane things, like paperwork ... And on more than one occasion. I've been on a 'real' vacation and ended up being on call for a client or logging in remotely for them. I never did that as an employee, but it's hard not to do when you are the owner of the company. "

Goff is a freelance writer in New York.

HEY,

REGIONAL SCOPE

Austin, Houston & San Antonio

check it out!

If you want to land a choice IT job in southern Texas, you better do your homework on the company first **By Emily Leinfuss**

LOOKING FOR an IT job in Austin. Houston or San Antonio? Learning as much about an employer's technologies and business insues before the job interview can mean all the difference in whether you get an offer. There are easy ways to learn about southern Texas employers. It just takes a nuous process of drilling down for more information until you get to the company, technology and job that's right for you.

HOW TO FIND IT The first place to find information about companies, industries and

technologies is the Internet, Virtu-

ion ion data in southern Texas.

pitty information on IT :

general, job sites that list tech

ally every company has a presence on the Internet now. That makes it easy to find company profiles. including current job listings and descriptions, and to take a peek at the technologies they're us

And that's no "if-1-find thetime" advice. These days, employers expect that all job applicants. especially in the information technology ranks, will visit their Web They fully expect you to at least have eained seneral information about the company from the corporate Web site, says Gary Mc-Gowen, manager of technology customer support at Arthur An-

dersen & Co. in Houston. "Our Web page shows all of what we do, our vision and our scope of customers," McGowen says. And if you expect to sit across the interview table from McGowen, he says it's imperative that you learn beforehand that the company does much more than

There's also a plethora of robust technology job search sites on the Web. Those can be a gold mine of information on IT organizations in southern Texas.

"By searching job markets or technologies through job listings, you can make inferences about what companies are doing with their projects and technology, says Clint Tomlinson, president of recruitment firm Technical Scouts in Austin. For example, "If you are interested in Java Web development, once you have found a detailed job description from a com nany, you know more about what they are up to," he says.

Opportunity is BIG in Southern Texas

The San Antonio IT job market indes companies in insuranhealth care and the military. And

then there's United Services Automobile Association (USAA), jokes Roy Forsstrom, IT director at ASI/ CartoTech Inc., a computer map ping services company in San

But there's truth in the humor USAA, a worldwide insurance and financial services family of companies that serve the military, is a huge presence in San Anton says Jim Burgess, USAA program manager of IT recruiting. Burness recently de USAA's dedicated IT recruitment ram. What jobs are available

at USAA and in the San Antonio iob market? "Pick one, and we are looking for it." Burgess says. That includes skills from mainframe IMS, MVS, Cobol experience to client/server. C++, Visual Basic, Unix. Oracle and object-oriented design to good Internet development, he says

ometimes it seems as if Austin is made up entirely of musicians and technicians (and sometimes the two are one and the same). There's a strong group of start-up, hightech companies here, mixing with established companies such as Dell Computer Corp.

The city hires a lot of technical ofessionals, Tomlinson says, and the demand for skills is wide and varied. C++ is always a mainster Unix and Windows background is needed, and there's growing demand for lava developers, he says.

In Houston newspapers and business periodicals, the common theme is the labor shortage. Hous-

ton is feeling the squeeze from a mass exodus of professionals caused by the downturn in the energy industry in the late 1980s. says Steve Satterwhite, president of Entelligence Inc., an IT professional contract firm in House "We see a wide gamut of skills







needed in the area - robust knowledge of Microsoft NT tech nology and Exchange server and the whole suite of [Microsoft] backend products is strong," he says "There are quite a few jenterpeise resource planning] projects getting off the ground, calling for SAP. PeopleSoft and Oracle developers And in the middle, a continuing demand for general client/server skills like C++, PowerBuilder and Meual Basic *Cl

Leinfuss is a freelance writer in Seresote, Ra.



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U.S. challenges temp status If a long-term temp is

close attention to this case,"

based attorney. She pointed to what she said were similarities between this sust and the 1993 rase against Microsoft Corp., in which former contractors successfully sued the software grant

for benefits. The use of temporary workers in information technology has been on the rise in part because of the IT labor shortage and the desire to control head count. According to the U.S. Burrow of Labor Statistics, the number of computer systems analysts and engineers working as temps or contract workers jumped from 76,000 in 1995 to 107.000 last year, an increase of

ONTRACTORS NEEDED

At Liberty Mutual Systems, the

IT arm of Liberty Mutual Insur-

ance Co. in Portsmouth, N.H.,

the number of IT contract work-

ers has swollen to about 450 be-

cause of year aooo and other

projects. "We expect that to

finished]," said Richard Ball.

ty. He said companies are more

likely to use contractors today

no hard-and-fast rules, but there

are some guidelines - such as

length of service and supervi-

son of the worker - that the

courts have used to decide

whether someone is a contrac-

tor or an employee. If a long

term temp is trained by the

company and is supervised by

an employee of the company

the courts tend to consider that

person to be a common-law em-

wee, according to attorneys.

pharmaceutical company poin

ed out that most IT projects last longer than six months. He said

a lot of contract employees like

One staffing manager at a big

almost 41%.

trained by the company and is supervised by an employee of the company. the courts tend to consider that person to be a

common-law employee. plovees [CW, Aug. 31].

In the case against New York based Time Warner, the com-

though they worked for Time Warner beyond four to six months, which Time Warner's own guidelines suggest should make them full-time employees The workers involved include about 1,000 journalists, photog raphers and graphic designers who worked between 1000 and the present on the company's

Observers said this case should be a signal for compa nies to at least review their policies in this area. Linda Pittenger, CEO of Som-

erset, N.I.-based People; Inc., a pany is accused of classifying consultancy that specializes in

TEMP WORKERS IN COURT Generally, the courts have upheld a company's right to exclude curtain employees from benefits plans

Workers were allowed in 401(k) and

stock purchase plans but didn't get Court rules that newspay

are ineligible for benefits The employee is denied benefits

A leased empl

tors around without a formal human resources issues surrounding IT, advises chents outsourcing pact is unwise. Pittenerr said. After a particular against using long-term temps. time period, such as six "My theory is that if you are gomonths, independent contracing to him out work, hire temps tors should either convert to for a specific skill and have them transfer that skill to your full-time employee status or be employees," she said. classified as outsourcers, she Keeping long-term contracsaid. O

Big SAP project on ice

on the project, is launching a crash program to do a year 2000 fix on the mainframe asplications that SAP AG's SAP Retail software was supposed to

wind down (as the projects are Bruce Cross, who became Nash Finch's new CIO just six ent manager at Liberweeks ago, said the company plans to revive the SAP Retail because it's so hard to find project in early 2000. But it is impossible to say" when the full-time people now."

The problems can come software could go into use, he said. Cross added that Nash then those contractors stay on the job for extended periods of Finch may start over with a time, attorneys said. There are

newer R/s release. Nash Finch was working jointly on the project with con sultants from both SAP and Ernst & Young LLP. Cross wouldn't say what bogged down the development work, and Nash Finch corporate spokes-man Norman Soland blamed it

simply on "testing and programming delays." The problems at Nash Finch are cative of the difficulties re-

tailers can face when they try to implement R/3 and other erprise resource planning (ERP) applications that were de veloped with manufacturers in mind, analysts said When work on the project be-un, the functionality needed by

food distributor and retailer 'didn't really exist" in SAP Retail. Soland said. "It was something that was being created [as part of the project). Nash Firch planned to start

rolling out the retail software in September, but Cross said the

schedule slipped first to next tune and then into 2000. Even managing to get some sites up and running nest year "wouldn't have solved our year 2000 problem," he added, "It was all or nothing."

NASH FINCH CO.

Headquarters: Minneapolis

1997 revenue: \$4.48 1997 net loss: \$1.2N Employees: 12,200 as of January

Rusinesses: 20-okus wholesale food distribution centers 100 retail food stores

in 13 states Produce-marketing subsidiary in California

SAP Retail was released in the U.S. 18 months ago. But only two U.S. compo Reebok International Ltd. and MJDesigns Inc., a Coppell. Texas, chain of arts and crafts stores - have the software in production at this point. And

Reebok did ask SAP to make changes in the software to fit its needs, 'but everything we needed for going live got done," said

Peter Burrows, chief technology officer at the Stoughton, Mass. footwear maker. "And compared with other things we've done we didn't really see [this project] as that challenging.

Microsoft sued by

Carriers sue Konses City Ster

The grocery business is especially complex, and Reebok and MIDesigns are both using a more advanced version of R/1 than Nash Finch was working

But Andy Laudato, director of systems development at Jo-Ann Stores Inc. in Hudson, Ohio. said SAP Retail still can't fully handle important retail task such as auditing store sales and changing the prices of entire product categories in one fell

"Where retail and manufacturine functionality overlap. [SAP Retail] is very strong. Laudato said. "But In areas that are specific to retail, it nust does-

n't have depth." Jo-Ann Stores intends to replace most of its mainframe based retail systems with SAP Retail next June as part of a \$30 million R/3 rollout. However. the chain of fabric and craft stores may have to hook in other applications to fill SAP's gaps, Laudato said. It also is

continuing with a year 2000 fix on the mainframe side in case the SAP Retail project runs into WILL BATTLE

Winning the trust of retaile "has been very, very slow for SAP," said David Dobrin, an analyst at Benchmarking Partners Inc. in Cambridge, Mass. "It's both turned it on only in the just a different set of problems than R/3 is used to dealir als such as Peopl Inc. and Baan Co. was trying to

avoid the kind of headaches SAP is having by teaming up

with retail software vendors, he SAP America Inc. executives responsible for the Newtown Square, Pa-based company's re-

tail program weren't available for commont by press time. Nash Finch is using SAP's finance applications and still plans to roll those out to more business units, Cross said. But SAP Retail is the centerpiece of the project, which was described in Nash Finch's 1997

10-K financial disclosure form as "a major strategic invefor the company's future." In addition to relieving the \$4.4 billion company of the need to invest in a year 2000 fix, SAP Retail was expected to deliver business and competitive benefits such as improved

efficiency and data analysis. We obviously had som hard-dollar benefits in mind." Cross said "But the bottom line is that we have to make sure we are year a000-compliant.

More than 100 Nash Finch sployees were working on the SAP project. Only a small num ber will be left to evaluate SAP's upcoming R/3 4-5 release and to entinue the finance rollout, Cross said. Most of the others will be shifted to work on the year 2000 program, which is expected to require 125 internal

workers and contractors Cross said Nash Binch is still ssessing how much the year 2000 fix will cost. Coding and ting are scheduled to be fin ished next April and October, respectively. Company execugoing to make it without a prob-lem." Cross said. D

the flexibility of their jobs and don't necessarily want to be em-MORFORD THE >

CONTINUED FROM PAGES last week, several Unix vendors

took a fresh stab at securing the high-end server space in which NT has been trying to mount a challenge. In an unusual double-header for the industry, Sun Microsys tems Inc. and an IBM-led consortium of windors last week made separate moves that promise to expand the gap be-

tween NT and Unix on both

Intel Corp. and RISC platforms.

Systems Inc. to develop a merced Unix for Intel's forthcoming 64-bit Merced chip, due late next year. IBM and Intel of millions" of dollars during the next few years into a campaiem to attract more independent ambication vendors to develop software for the merged Unix, which will be called Monterey (see related story at right)

also said they would sink "tens In a Computerworld poll of

cements (see chart). Such moves, combined with

the ever-receding launch date of NT co - renamed Windows 2000 last week (see story, page 8) - and Microsoft Corp.'s own npts to tone down expectations for that product, are piving Unix vendors a chance to regroup against Microsoft at the

high end, said Thomas Kraemer, an analyst at Morgan Stanley & Co. in New York. There is a little bit of a Unix

resurgence going on because NT is still not mature enough' to handle large workloads, Kraemer said. In Computerworld's poll, 73%

of the respondents said they would pick Unix to run busi ness-critical applications based on the relative strengths of the two operating environ "Unix is still a much more robust platform" for impo applications in terms of scala bility and reliability, said Ralph Pusco, manager of technical services at Liz Claiborne Inc., a mixed Unix/NT shop in North

Bergen, N.J. "NT will be there, but it is not quite yet." Visa International Inc. relies on a battery of Unix servers to give it the continuous availabil-

ity it needs for processing its U.S. credit.card authorizations Visa, which is migrating those operations off a range of small mainframes, chose Hewlett-Packard Co. Unix platforms because they are more reliable than NT, said Jim Long, a director at Visa in San Mateo. Calif. At the same time, though Windows NT is playing an expanding role at Visa, running a

us based PC should also include a databose, speeadsheet and presentation software, he said. Linux's commercial viability is on the cusp of being accep ed by business users, said Bill Rner, who runs the Unix consultancy BC\$ Technology Ltd. in

Morris, III. It's 'n watersh moment," he said. Brier said installing WordPerfect for a client that's implementing Linux will be an important test of the sys-

owth at 118.0% was much ster than the growth of Unix servers at 26.1% between 1996 and 1997, according to Inte tional Data Corp. (IDC) in Framingham, Mass. IDC is a ter company to Computereld. But on average, Units sys tems supported more end users and a wider range of applications than NT, IDC said.[3]

Vendors pitch 64-bit Unix for Merced

est week's elliance of IBM, Sents Cruz Operation (SCO) and S ent to develop a marged Unix for Intel^{*}a forthcomi ercod chip could pose a formidable threat to Sun^{*}a gr ence in the Unix market.

ment, 1814 will be Under the arrang SCO's Unicities and Sequent Computer's PTX of into a common Unix for Merced. 1864 will also to agy to SCO for use in UnitWare on IA-52 pie

Accounting for more than 40% of Unix server licenses sold last war, SCO is the largest wander of Unix on Intel, according to fig-ares from IDC, Unities other Unix vanders, though, most of SCO's

"Their greatest asset is their access to [independent notwern renders] and resollers who can help IBM drive AIX into the high obsers" Unit-on-Intel meter, Issues sind. IBM's initiative with SCO and Sequent comes after other Un-layers' Mercad moves. Herefelt-Packard Co.'s commitment b gan when it teamed with Intel to develop the IA-54 arc Sun has teamed with NCR Corp. to develop a Solaria w

of to ship some time late next year, the Mercud chip tion lies in its promise to run both Unix and Window stions equally well, and at a much lower cost the sension RSSC servers. — jalkamer Vijeyen

core worldwide payment system, for instance **Enterprise** "NT right pow is meant more for smaller and midrange appli-cations . . . but there is no doubt JavaReans that it is getting more mission-critical" based on Visa's experigains a tool

pected features, Long said.

software and tools are availa

is implementing a massive Oracle Corp. supply-chain man-

agement application on Sun Mi-

"We chose [Unix] because of

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expected to be equivalent to a

mainframe supporting more than 4,000 users, said Gye Hyun

Overall, Windows NT server

plays a publicard worlds many a single com-

Park, director of IT at LGE.

seyetems Inc. servers

ence with NT and NT to's ex-By Carol Slima And some firms, such as the \$12 billion L. G. Electronics Inc. THE NOT and increasingly (LGE) in Seoul, South Korea crowded application server are turning to Unix from main frames because more psckaged to run huge applications. LGE

space will get another Enterprise JavaBeans-compliant entry today when Novera Software Inc. launches the fourth version User companies say they

want products to support the prise JavaBenns specification - which will reduce the amount of code they need to write for distributed applica-

But many have been heptant to rush to use the few Enterprise lavaBeans 1.0-complia products on the market as the

specification matures Novera's |Business 4 is due by December for \$3.495 per developer. The development tool kit sells for \$3,495 per pro-

The application/management erver costs \$350 per concu rent user in an intranet setting and \$9.995 per processor for

Internet use. D

ope of more into will evaluate new authorizen from Mild and Marc

Sun rolled out a new 64-bit version of its Solaris operating system for RISC servers that features new books for Windows NT, Java and Web comce ICW, Oct. 261

And IBM said it's teaming with The Santa Cruz Operation Inc. and Sequent Computer

Corel to give out free Linux WordPerfect

By David Orenstein

OTTAWA-BASEO Corel Corp. is in the vanguard of companies try-ing to mine commercial gold from the freeware Linux operating system. But to expand the market and be true to Linux's spirit, it plans to give away a nearly full version of its Word-Perfect word processor for free WordPerfect for Limzz 8 will be available as a free download by midmonth, said apokes woman Susan Gauthier. The download vertion will lack clin

art, free technical support and a manual. The full version will cost Soo and be in stores in December; the upgrade from Version 7 for Linux will cost \$60. Core's studies show that 30% of Linux software users paid for the software she said

fessionals at mixed Unix and Windows NT shops, nearly one-

third of the respondents said

they would evaluate the new of-

ferings from IBM and Sun. but

86% said they wouldn't change

their plans for Windows NT on

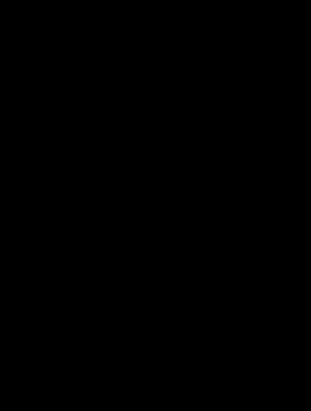
the server because of the an-

ORE APPS HEEDED WordPerfect for Linux brings Linux closer to becoming a viable alternative to Windows clients, but more applications are needed, said Andrew Alli-

son, editor of the "Inside the New Computer Industry' newsletter in Carmel, Calif. "Much as I would like to escape from Windows os. I have to escape to a safe and sane platform. I have to get my work done," he said. A cohesive packaging of a Lin-

tern'a capability He said he has used Word-Perfect for The Santa Cruz Operation Inc.'s version of Unix and found that it performs much faster than Windows or DOS versions. Unix operating systems, including Linux, man age memory more efficiently when multitasking, he said D





Unix regroups

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Vendors pitch 64-bit Unix for Merced

Last week's alliance of IBM, Santa Cruz Operation (SCO) and Sequent to develop a merged Unix for Intel's forthcoming 64-bit Aerced chip could pose a formidable threat to Sun's growing in-Suence in the Unix market.

Under the arrangement, IBM will integrate technologies from SCO's UnixWare and Sequent Computer's PTX operating systems into a common Unix for Merced. IBM will also transfer AIX tech-

nology to SCO for use in UnixWare on IA-32 platforms and will ort major middleware and applications to the merged Unix The deal assumes importance because it gives IBM immed access to SCO's expertise in optimizing Unix for Intel, said Tony lams, an analyst at D. H. Brown Associates Inc. in Port Chester

ing for more than 40% of Unix server licenses sold last year, SCO is the largest wendor of Unix on Intel, according to fig ares from IDC. Unlike other Unix vendors, though, most of SCO's

ence has been at the low end.

"Their greatest asset is their access to findependent software endors] and resellers who can help IBM drive AIX into the high-olume" Univ-on-Intel market, lams said. relative visitative with SCO and Sequent comes after other Unix players' Merced moves. Hewlett-Packard Co.'s commitment be-gan when it teamed with Intel to develop the Li-G₆ architecture. Sun has teamed with Co. Con. to develop a Solaris version for

Scheduled to ship some time late next year, the Merced chip's

main attraction lies in its promise to run both Unix and Windows NT applications equally well, and at a much lower cost than current-generation RISC servers. — (alkomar Vijayan

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Enterprise JavaBeans gains a tool

By Carol Slive

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Percentage of users who will evaluate new Unix offerings from IBM and Sun:

IBM OFFERING SUN OFFERING



Sun rolled out a new 64-bit version of its Solaris operating system for RISC servers that features new books for Windows NT. Java and Web commerce (CW, Oct. a6)

Windows NT shops, nearly onethird of the respondents said they would evaluate the new olferings from IBM and Sun. but And IBM said it's teaming 86% said they wouldn't change with The Santa Cruz Operation their plans for Windows NT on Inc. and Sequent Computer the server because of the an-

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MORE APPS NEEDED that's implementing Linux will

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SO YEARS AGO m Scientific Americas mag

azine reports on "cyber-netics." a new field of science that tries to find "the mmon elements in the eing of automatic

achines and the humas nervous system." 20 YEARS AGO

(November 1978 mStaeley Mark Rifkin, a computer consultant, is arrested and charged with stealing \$10.2 million from Security Pacific National Bank in a case of wire-

Java for the masses

As if Starbucks Coffee weren't ubiquitous enough, it now has a Web site (www.starbucks.com) for coffee aficionados. The site offers premium coffees and other oifts for sale. a store locator, a Coffee Taste Matcher that makes recommendations and - most important - a guide to pronouncing the names of some of the more exotic blends.



transfer fraud. THE FIFTH WAVE by Rich Tennont



Face it Vinnie - you're gonna have a hand time getting people to subscribe online with a certit card to a newsletter called 'Relons Interactive'

InsideLines

No sense of humor

MEISC OF MINIMUM panies that wink at employee-sponsored spoofs is may learn a thing or two from the Microsoft a cooft attorneys had Jim Barksdale, CEO of Ner ons Corp., squirming on the witness sta

ill neither confirm nor deny word on the se, Calif., vender is porting its Cisco Net-ve Directory (CNS/AD) to Sun Microsysnet Solaris while waiting for MICROSOT a comp-, now to be brown as Windows 2000. "It's obviously an our law screene, but as fix as doing it before [H1] 5,0, we can't com-ent," a Cisco spokesweemen said. And what about the rumored well NetWhre CNS version? "Net're always willing to work with the control of the control ers but have no de

and Dilbert will work for a pointy-haired ro

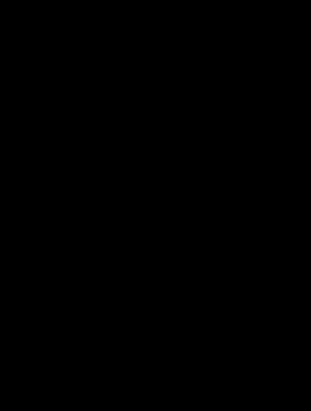
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ion Microsystems Chief Operating Officer Ed Zander, on New lork City's crackdown on street vendors: "One downside is that vic City's crackdown on street vendors: "One downside is the increasity just lost a channel for seelling software". - interna-nosi Data Corp., snalyst Bill Preservo, on Microsoft's announce and linking Windows to the year aboop problem with its on-ures, Windows abook: "Their's like saying the hacky number "". Slightly confused professional wrester Lavry Zhyash, "the millennium beg: "Wisk till the KYs problem lists in the

ne up and see my back office some time

The long hours put in by enterprise rese earns can make it awfully hard to find the t week. Only one (alleged) entry was is a brief message from "Brights," who w suitants in Paris." Ook-lo-lo. But by fride ets in Amsterdam, London and Grand Rag

oo bad that dating forum wasn't online in time to help Leshe Boarse, a member of the "culture team" at Sopient Corp., on ERP consultancy in Combridge, Mass. Her yearlong quest for a mase was the subject of a surreal, seven part series on the front page of The Boston Globe lost week. "I'm storsing to replice that movibe being in love with somebody is being swept away with abandon," as the is quoted, sounds tailor made for a chat room. News editor Patricia Keefe has her own page one problons to worry about, but you can help by sending your news tips and tulbits her way. E-most her at patricia, keefe@cw.com or call (508) 820-8183.



The Back Page

Digital archives



50 YEARS AGO

ne reports on "cyber-ics," a new field of sci-te that tries to find "the nmon elements in the actioning of automatic nes and the h ous system."

> 20 YEARS AGO (November 1978)

s Stanley Mark Rifkin, a computer consultant, is arrested and charged with stealing \$10.2 million from Security Pacific National nk in a case of wire-nafer fraud.

Java for the masses

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THE FIFTH WAVE by Rich Text

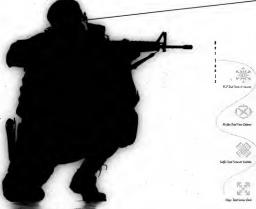


"Face it Vinne – you're gorna have a hard time getting people to exhibit online with a centroud to a newsletter called "Rejons Interactive"

InsideLines

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Most firewalls are like bullet-proof vests. That's the problem.



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